

# STANDARDIZATION

*Formerly Industrial Standardization*

**News Magazine of the American Standards Association, Incorporated**



# American Standards Association

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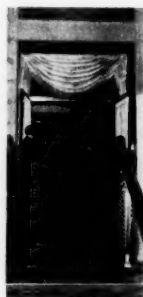
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Company Members—More than 2400 companies hold membership either directly or by group arrangement through their respective trade associations.

## Marginal Notes

### The Annual Meeting—



Members of the American Standards Association met this year at the Waldorf-Astoria, New York, in a four-day meeting that had its climax in a luncheon and joint session of Member-Bodies, Standards Council, and Board of Directors Friday afternoon October 11. For the first time ASA members had an opportunity to speak up from the floor to present their ideas on how the Association should be run (see page 325). Some 300 members and guests gathered in the Wedgwood Room to hear Dr Wilson Martindale Compton speak on the proposed "Point Four" program of technical assistance to underdeveloped countries. By odd coincidence, the United Nations subcommittee considering the program had just voted favorably on it.

Dr Compton greeted those gathered in the Wedgwood Room as old friends. "Joining again in an annual meeting of the American Standards Association is like a reminder of 'happy days,'" he said. "No one who sees today the great influence of this organization in the advancement of American industry will fail to sense the dividends in industrial and public service finally being paid on the valiant, patient, and determined efforts of the pioneers in standards of only a comparatively few years ago." Extensive excerpts from Dr Compton's speech are given on page 309.

Particularly interesting was a session on international standardization (page 313).

The full-day meeting of the Company Member Conference (page 314) brought much favorable comment. You will enjoy the paper by W. H.

Kiler (page 315) and will be interested in the analysis of the status of preferred thicknesses for thin flat metals (page 320). Other papers will be published in future issues.

#### Modular Coordination—

"Going astern slowly" is Admiral Hussey's nautical term for the present condition of Project A62 on Modular Coordination of Building Materials and Equipment.

Architects and contractors who have worked with modular coordination have been enthusiastic in saying it can give the building industry all the advantages of mass production and standardization without uniformity of design. There is one catch, however, that has caused the backward trend noted in Admiral Hussey's "going astern slowly." Technical services and information are needed to coordinate sizes before modular products are available to the small builder as well as the big contractor. Action to reverse the present backward trend of the project (see page 311) will therefore help to determine whether American home owners are to benefit from lower building costs that early developments in modular coordination have made possible for government and other large-scale builders.

#### Our Front Cover

Dr Wilson M. Compton and Admiral G. F. Hussey stopped long enough for a picture to be taken at the Park Avenue entrance to the Waldorf-Astoria Hotel before going into the hotel's famous Wedgwood Room for the ASA Annual Meeting Luncheon. Annual Meeting "goers" of the preceding three days and a large press turn-out relaxed and enjoyed the Waldorf cooking, then turned strict attention to the words of guest speaker Dr Compton, who had challenging thoughts on international trade and the role of standardization. (See page 309 of this issue.) All annual meeting photographs taken by S. David Hoffman.

*Opinions expressed by authors in STANDARDIZATION are not necessarily those of the American Standards Association.*

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Standardization is dynamic, not static. It means  
not to stand still, but to move forward together.

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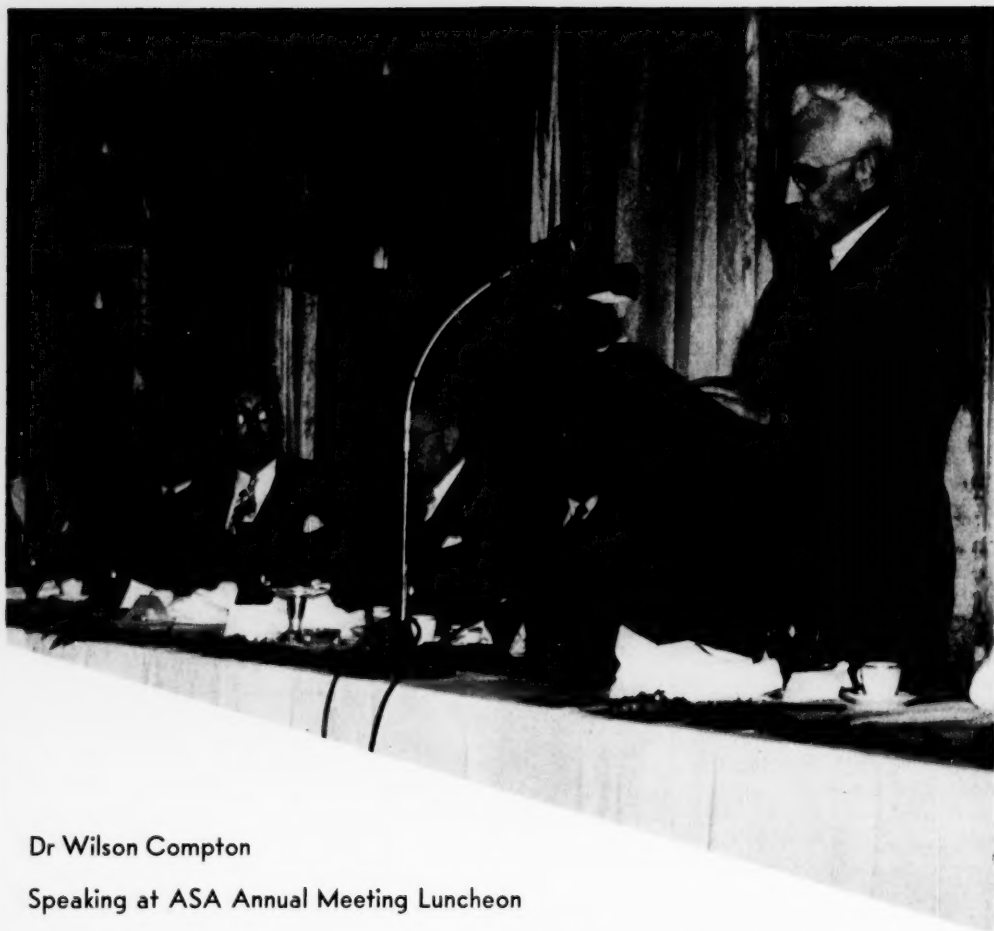


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### Dr Wilson Compton

#### Speaking at ASA Annual Meeting Luncheon

Dr Compton's subject—economic aid to underdeveloped countries—was of special interest to all concerned with standardization. As the necessary standards are developed in these countries, they can either contribute to an easier flow of goods or act as a barrier to international trade. As United States Alternate Delegate to the United Nations, Dr Compton is qualified to speak on the subject. His long career in the study of public economic problems gives his views added authority.

In addition to college teaching in political science and economics, he has been closely affiliated with the lumber industry, both in the government and in the industry itself. He has served as the executive officer of the National Lumber Manufacturers' Association; vice-president and manager of the American Forest Products Industries, Inc; founder and president of the Timber Engineering Company; and founder of the industry-owned Wood Research and Testing Laboratories.

Since 1930, Dr Compton has been a member of the Advisory Commission of the U. S. Timber Conservation Board; member of the U. S. Quartermaster General's Advisory Board on Materials and Supplies since 1942; and a Consultant of the U. S. Office of Scientific Research and Development since 1943.

He is now president of the State College of Washington.

*"Observance of standards has become a part of our normal way*

# Trade Must Cross National Boundaries

by Dr Wilson Compton

THE program of the President of the United States for technical assistance to the economic development of other countries, now familiarly identified as "Point Four," is one of the vital and urgent issues before the United Nations in the present session of its General Assembly. I should like to discuss it against the background of our American enterprise system, the vitality of which will in the long run be the measure of our ability to aid worldwide economic development and to share in its benefits.

On June 24 of this year the President submitted his specific program to Congress, and the proposed legislation which would authorize the program and provide the necessary funds is under consideration in the appropriate committees of Congress. It will not be acted upon in this session. He had advocated in plain simple words an international economic policy for the United States. I think it is a sound policy. Even more, I think it is an indispensable one if we are to have peace and if in the long run we are to have both peace and prosperity.

Since the end of the war in 1945 the various forms of American aid to foreign countries have totalled more than 25 billion dollars. American investments in foreign countries now are over 17 billions, of which two-thirds is direct investments in foreign business and industry. During the past single calendar year, American business investments abroad increased by nearly one-eighth.

At the same time, last year our exports were about 12½ billion dollars and our imports, 7 billion. It takes no great economist to know that these two equations will not continue indefinitely.

It is well known that the United States has some large export surpluses and that the surpluses are growing larger at the same time that the dollar purchasing power of other countries which, ordinarily, would buy our surpluses is getting smaller.

Also, it is well known that of the 2.4 billion world population, about two-thirds who are underfed, underhoused, and underclothed are increasingly aware that their impoverished way of life can be improved and

they, with their governments, are out to improve their conditions. Think of the current of events in China, the rising tide of nationalism in India, the ferment in Indonesia and the Indies and Africa involving half of the world's population.

Against this background let me give you a single simple illustration. To many of you the name of the Morrison-Knudsen Company is familiar. It is a giant contracting firm, one of the principal contractors, for example, on the Grand Coulee and Columbia Basin projects in my State. Through a subsidiary, the Morrison-Knudsen International Company of San Francisco, it is now engaged in constructing a huge multiple-purpose dam in Ceylon to reclaim an area of about 65 million acres. In the days of the Ceylon kings this was a populous area, but it was lost to the creeping jungle a thousand years ago.

The ancient irrigation systems of Ceylon were built by coolie labor. A single one of the huge Morrison-Knudsen earth-moving machines digs, moves, and loads in one minute as much dirt as 200 coolies working for the ancient Ceylon kings carried on their heads in baskets in one month's time. This dam will be nearly a mile long and 125 feet high. The construction work is going on by day and by night under flood lights continuously. Native Ceylonese are being used to pilot and so far as practicable to operate these "cats," crushers, loaders, and trucks.

This construction project, known as the Gal Oya, or Small Rock River project, has so captured the imagination of the Ceylonese that the Prime Minister a few days ago rode into the project on his ceremonial elephant for what we would call a laying of the "cornerstone" of the Gal Oya works. On the project undertaken by an American firm are only 60 Americans; the rest of the construction crew of about 1500 are Ceylonese. This extraordinary work is being done under an ordinary contract by a firm which probably would describe itself as an ordinary American contractor.

Ceylon now imports most of her

sugar. The Gal Oya irrigation works will provide about 20,000 small farms. It is intended that they will grow sugar cane, and expected that Ceylon will then largely supply its own sugar needs. Incidentally, Ceylon is one of the countries seeking membership in the UN.

Multiply, if you will, the Gal Oya in Ceylon by hundreds and eventually, perhaps, by thousands in underdeveloped countries and you have a rough measure of the potentiality of economic assistance such as has been proposed by the President and is under consideration as an international undertaking in the General Assembly of the United Nations. These potentials, of course, vary greatly in different countries depending on their resources, climates, economic systems, and the aptitudes of their people.

Many countries seek first an expanded agricultural development. Others are hopeful of the early development of industries, including mining and manufacturing. A few days ago I was talking with one of the delegates of an Arab country, Iraq, asking him what form of economic development was needed in his country. He said that they particularly need irrigation works on the Tigris and Euphrates Rivers. "Thousands of years ago," he said, "Babylon had a population of 15 million; now it has 4½. We have not lost our soil; we have lost our irrigation, and we must restore it." Other countries are thinking in terms of diversified industrial development in minerals, metals, ceramics, wood products, textiles, chemicals.

There is no room for doubt that the sharp enthusiasms of many countries have been whetted by the hope, and perhaps even the expectation, that there will be a succession of "handouts" by the United States. That is a hazard against which there must be constant watch. That is why in the presentation of the views of our Government in connection with the plans for assistance to economic development through the agencies of the United Nations we have so strongly emphasized that these undertakings should be based on the assumptions of mutual interest, mutual benefit, and mutual advantages; and especially on what we have called

*of life and a source of industrial strength" . . . Dr Wilson Compton*

"self-help," namely that the assistance to economic development from the United Nations and its specialized agencies should go "to help those nations which to the full extent of their own means are willing and determined to help themselves."

In the division of labor within the United States Delegation to the General Assembly of the United Nations my assignment has been to speak for our Government in connection with the economic and financial programs. This includes the matter of assistance to economic development. One significant fact in connection with that work I would like to mention. There are, as you know, 59 members of the United Nations. Each member nation is represented on each committee of the General Assembly. The Committee on Economic and Financial Affairs has before it a recommendation on technical assistance to economic development of underdeveloped countries. This assistance would be made available through the Food and Agriculture Organization, the International Labor Organization, United Nations Educational, Scientific and Cultural Organization, International Civil Aviation Organization, World Health Organization, and through agencies of the United Nations having to do with transportation, communications, mining, and industry. The estimated annual expenditures for technical assistance are of the order of 20 million dollars to start with and an appeal is made to all member nations to participate in the program, nominally at least, if they are unable to do so substantially as a symbol of the mutuality of this international undertaking in behalf of stronger foundations for peace. No conclusion, of course, has yet been reached on these matters.

If you will study this program, I think you will find great merit in it and great possibilities for the future. It is primarily a peace program. It is also an important program looking to expanding worldwide trade. It is perhaps less spectacular at the moment than debates over atomic energy controls, or the disposal of Italian Colonies, Palestine, Indonesia, Korea, or other immediate issues which threaten the peace of the world. But, in the long run, this program of economic development may be far more important to peace, because if we know our history we know that if trade does not cross national boundaries, eventually armies will.

## The Chamber of Commerce of the U.S. Salutes ASA at 31st Annual Meeting

Expressing his belief in American industry's vital interest in the work of the American Standards Association as "an essential factor in the maintenance of a vigorous free productive system working in the interest of the American people," Herman W. Steinkraus, president of the Chamber of Commerce of the U. S., addressed this letter (excerpted below) to Vice Admiral G. F. Hussey, Jr. (USN, ret), secretary of the American Standards Association. Admiral Hussey read the letter at the annual meeting luncheon.

Dear Admiral Hussey:

...

It is encouraging to see the widespread interest on the part of American industry itself, spurred by the ASA, in a field where neglect on its part might bring government intervention with its attendant dangers.

Voluntary standardization, achieved by all interests directly affected, results in orderly progress consistent with the cherished diversity that is so characteristic of America. Continual review of accepted standards facilitates and assures steady expansion into new fields of products and services. Government-imposed standards, on the other hand, could mean narrow regimentation and a hobbling of technological progress.

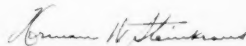
These activities are especially important in this period as a means of helping to maintain the nation's industrial fitness. And our industrial fitness is a measure of our ability and determination to do our part in preserving the peace of the world.

The Chamber of Commerce of the United States has a history of cooperation in these efforts and it is my desire that we continue to serve the voluntary standardization cause wherever we can do so effectively. Most recently our Construction and Civic Development Department has been working with you on the problem of restrictive laws in many areas that block the application of some of your most useful standards in the field of construction.

Many of the Chamber's member organizations are members of your Association. Others are among the hundreds of groups with which you work as a national clearinghouse for promoting broader acceptance and use of standards. Our organization has been represented on a number of your Association committees. I shall urge other national trade associations and business groups to overlook no opportunity to participate in this important activity. They look to the American Standards Association for leadership.

It is my hope that during the coming months Chamber committee action will lead to an appropriate declaration of Chamber policy in favor of voluntary standardization. Meanwhile, I am glad of this occasion to commend the American Standards Association on its thirty-first year of service and assure you of our hearty support of the work you are doing.

Cordially,



HERMAN W. STEINKRAUS  
President



T. D. Jolly re-elected ASA President.

**T**HOMAS D. JOLLY, vice-president of the Aluminum Company of America, has been re-elected president, and Dr H. S. Osborne, chief engineer of the America Telephone and Telegraph Company, vice-president of the American Standards Association for the coming year.

Walter C. Wagner, Executive Department, Philadelphia Electric Company, will continue to serve as chairman of the Standards Council, with J. R. Townsend, Materials Engineer,

## Jolly and Osborne Re-elected

Bell Telephone Laboratories as vice-chairman.

Mr Jolly is nationally known for his outstanding record in administering the inter-related engineering and purchasing activities of his company. In 1948 he served as adviser to the Hoover Commission studying government reorganization, and he was awarded an honorary degree as doctor of engineering by the Rensselaer Polytechnic Institute.

Dr Osborne has been with the Bell System since 1910 in various phases of communications engineering and is the newly elected president of the U. S. National Committee of the International Electrotechnical Commission.

Both Mr Wagner and Mr Townsend are well known in standardization circles, Mr Wagner as a member of the Council since 1924 and as former vice-chairman of the Company Member Conference. Mr Townsend is a past president of the American



Miss Ardenia Chapman, new member of Board of Directors, and W. C. Wagner. For story on Miss Chapman, see p. 326.

Society for Testing Materials. He is a member of the ASA Mechanical Standards Committee and chairman of the Board of Review.

## Modular Building Future Studied

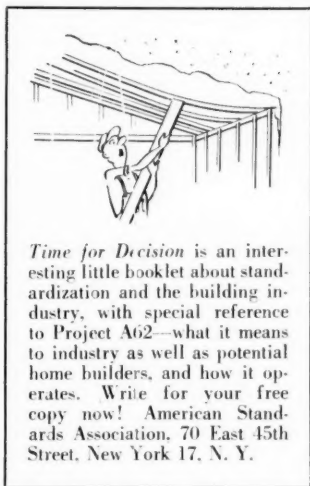
The future of modular coordination of building materials and equipment is now in the hands of a committee appointed following a conference of architects and building materials manufacturers October 19. The modular system is one of the most important modern developments for reducing costs and cutting the time spent on a building job, the conference agreed. Even one small non-standard item such as the irregular size of tubular locks for interior doors amounts to an unnecessary cost of ten million dollars a year to the home-buying public, current estimates indicate.

At the present time, although many large builders have been able to buy modular materials and products because of the size of their orders, architects and contractors on small jobs frequently have found it impossible to carry out their plans because modular products have been unavailable as standard items.

As a result, architects generally are unwilling to commit themselves to use of the modular system until they are sure that building materials and products are available in the sizes they specify. Manufacturers of the materials and products, on the other hand, hesitate to undertake the expense of converting to modular sizes until they are sure that archi-

tecs and builders are going to call for them in sufficient quantities to make conversion pay.

Among materials and products that



have already been converted to modular sizes and are now generally available are steel windows, wood double-hung windows, many masonry products, and glass blocks. As explained by a representative of the

Metal Window Institute, the 3,000 types of windows produced before modular coordination have been cut to 300 types, with a corresponding saving to the manufacturers.

The saving in time and cost of construction was pointed out by one organization (Alfred Hopkins Associates). During the war this company was asked to design and construct a building of 600,000 square feet (15½ acres under one roof) and have it ready for occupancy between May 16 when the request was received and September 1. The plans included a train shed housing three tracks, each almost 1,000 feet long, locker rooms for 3,000 people, two areas of office space, a cafeteria to serve 800 people, and two truck docks, each about two blocks long. By concentrating entirely on modular coordination, the plans were complete in 29 working days, and the entire construction in 72 working days (in time for occupancy September 1).

Despite this record of accomplishment the October 19 meeting was called by the American Standards Association at the request of companies who believe that "the success of the whole undertaking is at stake." They had invested a considerable amount of money in converting for the production of modular products but found that a long-range program for  
(Continued on page 324)

# International Standardization—What Does

THE role of U.S. economic foreign policy in achieving our ultimate foreign policy objectives is to promote the free flow of goods across national borders in ever increasing quantities. Unfortunately, the economic destruction and dislocation resulting from the war makes it necessary to take certain steps toward restoring the productive capacity of our friendly neighbors along with efforts to reduce barriers to trade. In the underdeveloped areas, we must help the people learn modern agricultural and industrial methods to enable them to make an increased contribution to an expanding world economy and a balanced world trade.

In justification of these programs, it has been pointed out that we are dependent upon foreign countries for many vital minerals and other raw materials. It is stated that without foreign trade many of our industries would suffer. It is also argued that we need to sell many things abroad. We must have foreign markets for our cotton, wheat, and tobacco. Our prosperity would be seriously damaged if the export of our products were cut off. To these arguments I would like to add one based on the traditional principles of a free enterprise economy. Rather than thinking of our programs for increasing production abroad as something which will ultimately result in competition for United States producers, it should be remembered that human wishes and desires are infinite. Advertising, moreover, is constantly creating new desires. For these reasons it is possible to achieve continuously expanding world trade.

I can't emphasize too strongly the need for thinking in terms of the indefinite expandability of consumers' wishes. The American system of free



by Joseph A. Greenwald

competitive enterprise is not based upon the theory of the "mature or contracting" economy. I am optimistic enough to believe that when the wartime backlog of demand for durable goods has been exhausted, American industry, operating under a profit motive, will not rely upon the replacement demand, but will develop new products which American and foreign consumers will purchase. In many cases these new products will be improvements on old ideas. In other cases, the innovation may be something like the automobile, which will in turn start off a tremendous chain of allied products and industries. It is my own feeling that the future expansion of trade and production will be in the area of many of the products and devices now used by Buck Rogers. Raising production and standards of living in underdeveloped areas will introduce the people in these areas to new products and give them the effective purchasing power with which to buy them.

In encouraging the reduction of

barriers to international trade the United States is basing its policy upon the basic philosophy which has enabled it to achieve the greatest level of production in history. We are convinced that a system of free competitive enterprise is the best way of promoting the general welfare of people throughout the world and preserving to them the benefits of democracy. Under this system the decisions regarding what is to be produced are made by the impartial forces of the market.

As you are aware, the postwar trend has been away from free enterprise and free trade. Competition is generally considered something which came and went with Adam Smith. But twenty-three nations adhered to the General Agreement on Tariffs and Trade, which provides a mechanism for reducing governmental barriers to trade, and a number of European countries have begun to investigate the effect of private restrictive business practices and cartels upon national productivity. I feel that international standardization can help in restoring some degree of competition in international trade.

In implementing United States foreign economic policy through international standardization, the benefits will accrue not only on the rather idealistic level of promoting world peace and prosperity, but on the dollar and cents level of increasing American foreign trade. For example, the well-known case of the international unification of sound track location on 16-mm sound film has made it possible for the American motion picture industry to sell its products abroad. In this case the benefits were equally important in the field of ideas, because we have been able, through American motion pictures, to present our way of life in every corner of the earth. It appears that the adoption of different television standards in various countries may impede the flow of ideas through this new medium as well as impeding the sale of television sets across national borders. In my technical ignorance I continue to wonder about the situation where different electrical voltages and cycles make the use of American electrical appliances abroad very difficult. It seems inconceivable that the American manufacturers and traders do not realize that their self-interest lies in

*Joseph A. Greenwald, Economist with the Division of International Resources, Department of State, was born in Chicago, Illinois, in 1918. He was graduated from the University of Chicago with a B.A. degree in 1941, and from the Georgetown University Law School in 1943. From 1940-41 he served in the United States Navy. From 1941-46 he served as Economist with the Civilian Production Administration, and in 1947 as examiner with the United States Patent Office. He has been with the Department of State since November 1947. In August 1949 Mr. Greenwald served as United States delegate to the Tripartite Conference on German Participation in the International Patent Office held in Frankfurt-on-the-Main, Germany.*

*"The adoption of standardization techniques would greatly help to*

# What It Mean to the United States?

the direction of promoting international standardization.

With respect to our foreign economic policy objective of increasing world production, the report of the second session of the Anglo-American Council on Productivity is significant. It is the view of the Council that low cost production and high productivity can be obtained only by utilizing standardization, specialization, and simplification procedures and methods. The adoption of standardization techniques would be a great factor in re-establishing the European economy on a self-supporting basis. In connection with the Technical Assistance Program for underdeveloped areas standardization is equally important, but the emphasis

is different. In providing assistance to these countries, attention will be directed primarily toward the basic problems of agriculture, public health, and resource development. The question of inspection and grading is important in the development of markets. For example, Liberia produces palm oil which, as you know, is an essential strategic material used in the production of steel. However, the United States steel industry finds palm oil from Liberia unsatisfactory because of its low quality. Thus there is a need for inspection and grading procedures in Liberia which we hope will bring up the quality of Liberian palm oil. Our economic mission in Liberia is assisting the Liberian Government in establishing a

grading and inspection service. A more basic requirement in many of the underdeveloped countries is the establishment of uniform standards of weight and measurement. It is hoped that these standardization techniques will be part of the American "know-how" which we will transmit to the industrially backward countries of the world.

International standardization can play an even more important role in achieving our objective of reducing barriers to and smoothing the flow of international trade. The lack of international standards often results in the exclusion of certain goods from a particular market where the national standards of the consuming

(Continued on page 330)

America's role in International Standardization was thoroughly analyzed in an all-afternoon session that turned out to be one of the highlights of the ASA Annual Meeting. The afternoon of speeches by delegates who had attended the ISO 1949 meetings in London, Paris and Stresa, Italy, was concluded with a challenging talk by Joseph A. Greenwald, Economist with the State Department on "What Does International Standardization Mean to the United States" (page 312, this issue). Dr H. S. Osborne spoke on the Work of the International Electrotechnical Commission (also reported in this issue, page 327). Other speeches, by F. Leister and R. M. Riblet, W. H. Gourlie, Dr John Gaillard, F. R. Fetherston and George S. Case, Sr, were reported for you in the November issue of STANDARDIZATION. In the picture at the right, F. R. Fetherston and Howard Coonley, president of the ISO, look over the issue of the *Congressional Record* which contains Senator Flanders' speech proposing the Bill to incorporate the ASA.



Dr John Gaillard, W. H. Gourlie, and George S. Case, Sr, participated in the International session.



George S. Case, Sr, and W. H. Gourlie were enjoying a laugh with old friends when this was taken.

put European economy on a self-supporting basis". . . Joseph A. Greenwald

# ASA Company Members Discuss Effective

**G**OLDEN opportunities in improved efficiency, lower operating costs, and ability to offer customers significant economic advantages await companies that make effective use of standardization. This was the general theme of the Company Member Conference during the ASA annual meeting October 12. Company executives in charge of standards, production, and purchasing, with the responsibility for maintaining their companies' operations at high efficiency and low cost attended the conference. Speaking on "The Importance of the American Standards Association in the National Economy," Thomas D. Jolly, vice-president of the Aluminum Company of America, and president of the American Standards Association, opened the meeting. Mr Jolly's talk is published on page 325 of this issue.

The papers all discussed in detail how standards contribute to the effective operations of a company in maintaining its competitive position, how standardization operations interlock with other company activities, and what problems have been found in using Standards.<sup>1</sup>

Questions from the floor brought additional lively discussion concerning experiences of the individual companies.

<sup>1</sup>Several of the papers presented at the Company Member Conference are published in this issue ("American Industry's Stake in Plant Construction Standardization," by W. H. Kiler, page 315; "How to Use the Standard for Thin Sheet Metals," by I. V. Williams, page 320). Others will be published in subsequent issues. "What Procurement Expects of Standardization," by Vincent de P. Goubeau, is scheduled for the January 1950 issue; "Where Should the Standardization Activity Fit into an Industrial Organization?" by Thomas J. Finan, for February.



William P. Kliment and E. W. Gardinor

In the case of the American Standard preferred thicknesses for thin flat metals, discussion indicated that a transition from the use of the old gage numbers to the standard decimal thicknesses for stainless steels and certain alloy steels has already started in the aircraft industry. A representative of one aircraft company told how he had made a conversion table for use in his company showing what decimal thickness sheets would be permitted for each gage number. Warehousemen and aircraft manufacturers east of the Rocky Mountains have been working together on the problem and the warehousemen are now in process of converting their operations to keep their stocks in accordance with the preferred decimal thicknesses. Other company representatives urged the view that the burden of responsibility for getting a standard into use is on the users, particularly if the standard is obviously of more advantage to the user groups than it is to the manufacturers.

Municipalities, officials interested in building codes, trade groups, and a number of governmental agencies have shown a change in their attitude and are now becoming interested in using more precise engineering data in the development of building code requirements. This was brought out during discussion of Mr Kiler's paper on "American Industry's Stake in Plant Construction Standardization." Some of the recently approved building codes make provisions for stresses so far ahead of those used 15 or 20 years ago that they have brought about noticeable savings in building construction, it was reported. The ASA building code program is serving as a feeder to all of these code activities and to all the groups that are preparing building codes, it was pointed out.

Attention was called to the pamphlet on "Nationally Recognized Standards in State Laws and Local Ordinances" which discusses methods that might be used by government groups to adopt nationally recognized standards more easily and quickly, and thus make it possible to keep local building regulations up-to-date with technical advances. This pamphlet was prepared by a special committee appointed by the Standards Council and has been published by the American Standards Association.

A new chairman and vice-chairman as well as four new members of the Administrative Committee, were



ASA President T. D. Jolly speaking at the Company Member Conference.

elected during the meeting of the Conference. E. W. Gardinor, International Business Machines Corporation, will serve as chairman for the coming year, succeeding S. H. Watson, Radio Corporation of America; and W. P. Kliment, Crane Company, will serve as vice-chairman.

Arthur J. Beck, Detroit Edison Company; R. A. Frye, Westinghouse Electric Corporation; Harry A. Marchant, Chrysler Corporation; and R. W. Steigerwalt, Carnegie-Illinois Steel Corporation, were elected to the Administrative Committee.

With the resignation of Dr Thomas Spooner of the Westinghouse Electric Corporation, the Company Member Conference has lost one of its most outstanding and effective members, the Conference recognized in a resolution adopted at the meeting. Dr Spooner retired early this summer. "Long association with the American Standards Association and national engineering societies, which have benefited from his judgment and ability to envision progress, together with his understanding and appreciation of the opinions and experiences of others, particularly fitted him for participation in our postwar reactivation of the Company Member Conference," the resolution declares. "He has contributed materially to the formulation of rules of procedure and its by-laws, and given capable direction to projects presented to the Conference for its consideration. Among his many contributions to ASA are his work as CMC chairman of the special committee

(Continued on page 324)

# e Standardization

**I**N a moment of weakness, I accepted the invitation of your chairman to talk on this subject. After thinking for a couple of weeks of what I could possibly say of interest to such an august group, I discussed the subject with one of my associates. He made the subject sound quite simple, suggesting if you wanted to fall a tree, you would need an axe and a crosscut saw, but if your problem was to reduce the fallen tree to firewood, you would need a bucksaw, a sledge, and some wedges. You wouldn't dig a ditch with a crosscut saw and an axe. This seemed worth repeating.

Industry builds its plants to produce a given product. The product to be manufactured largely influences decisions regarding the type of construction chosen. New products and new materials require new selections of construction types. Yet industry must build to comply with codes which date back to the 30's and 90's.

This is not an attack upon Building Codes. They do have many shortcomings. But industry must live with them as they exist. To change them industry can only urge for action by some such organization as the American Standards Association in conjunction with the various scientific societies.

There are many types of industry from the small plant in a loft, or even in a barn, to the largest whether it be a steel mill, an oil refinery, or a plant to produce some chemical product. It is not alone the larger plants of industry which are affected. The smaller plants where few workers are employed must, even more carefully, consider their construction costs.

And what is industry's stake in plant construction standardization?

American industry is presently investing in excess of five and a quarter billion dollars each year in new plants at new locations; probably two billion dollars more to install modern tools and equipment in existing plants.

New plant construction involves architecture, civil engineering, structural engineering, machine and mechanical engineering, chemical engineering, sanitary engineering in waste and sewage disposal, the generation and distribution of steam and electrical energy; in fact, includes and requires complete coordination of all of the features of the various branches of engineer-

## American Industry's Stake in Plant Construction Standardization

by W. H. Kiler



Vincent de P. Goubeau and W. H. Kiler, Annual Meeting speakers.

ing into the whole. Each of these branches of engineering has made tremendous progress in standardization through its technical society. The standards engineer for any industry must carefully select those parts of the standards for each branch of engineering most useful and economical for his particular industry.

The construction of plants for some of the newer processes introduce the problems of the chemist, the chemical engineer, the metallurgist; with pressures soaring into the unknown and temperature ranges from the lowest to the highest, both spreading more rapidly each year. Many new problems arise, some never before solved.

Standardization is rapidly becoming an even more dominant characteristic of America's rapid industrial development. The heightened interest in the uses of standards can, in

part, be traced to the experiences gained during the War which required use of the best techniques, methods, and materials; simplification of design to reduce and to duplicate not only parts of plants, but in some cases, whole plants; for maximum interchangeability and for speed of construction. Many thousands of man hours were saved in design, procurement, and construction.

The greater control through standardization was then important for the conservation of materials, and more important still, manpower. Post war, with rising construction costs and the shifts from a buyer's to a seller's market and now back again, the importance of standardization to industrial construction becomes increasingly important as a means to make it possible to purchase a better product at lower cost; in short, to build and to maintain their investment more economically.

Standardization, of course, is no magic process by which competitive positions are suddenly restored, production automatically raised, and costs dramatically lowered. Experience in construction has shown that premature or excessive standardization may become a liability and an obstacle to progress.

Recently, the Board of Directors of the National Association of Manufacturers adopted a resolution commending to the attention of management the desirability of promoting the development and use of sound voluntary standards, and the strength-

*W. H. Kiler is Administrative Head of the Standards Section and Deputy Chairman of the Standards Committee of the E. I. duPont de Nemours & Company. For 32 years he has been actively engaged in the design and construction of plants for the explosives industry, as well as for equipment used in the manufacture of explosives. During this time, he has designed many industrial and chemical plants, such as the Naval Stores Plant at Hattiesburg, Mississippi, the commercial explosives plants at Bessemer, Alabama, and at Goiabal, State of Rio de Janeiro, Brazil.*

*His contribution to the war effort included standardization of the design for the nitric acid ammonia oxidation plants, and nitric acid concentrators; standardization of the design for TNT plants; and for equipment and parts of plants built for the military departments.*

ening of such efforts, to that end, on the part of trade associations, technical societies, and specialized standards organizations.

They pointed among other things to standard building codes and material specifications; standard definitions of commercial and technical terms and safety and sanitation standards.

American industry has made its progress because it has been willing to invest more and more money to provide the tools of production. Since 1924, the investment in American industry has more than doubled.

But back of the willingness to save, to invest, to risk their savings in industrial ventures is the hope of profit. Remove the hope of profit and we will destroy all hope of future prosperity.

Since industry invests their money in a plant to make a profit, it follows that a plant which is not carefully constructed to fit the work that must be done within, can cause waste in many directions.

Floors may be floors, but their kind and condition affect handling, spoilage, and safety. Defective or improper roofs may cause damage to product and equipment. Inadequate lighting causes spoilage and poor quality. Lack of conditioned air in many instances is responsible for an inferior product or unjustifiable waste in manufacture. Employees who work in poorly equipped buildings are almost certain to produce low quality goods and contribute to unduly high labor turnover.

Successful practices soon become common knowledge. Mistakes in operating control or practices can readily be corrected. But, a mistake made in the original plant layout or construction, which contributes to unsafe or improper operating conditions or to high costs, stands out. It becomes a constant reminder of the error until corrected—many times, at great expense.

To illustrate the extent to which

the product influences the plant construction features, let's look at a plant to produce the lowly beer can. We normally think of the beer can as a more ready means to stow beer, than in bottles. We punch two triangular holes in one end. If the day is hot, we consume the contents in one or two gulps and heave the can overboard. But, for the moment, let's think of the beer can from the viewpoint of an industrial plant.

Beer cans must be perfect. Leaks or other defects cannot be tolerated. Cost must be low. All this boils down to the fact that the plant equipment, housing, facilities, and services must be top notch to take full advantage of every aid to the production of a better product at low cost.

Production rates dictate the space requirements. Space requirements dictate dimensions. Cost of land and services determine whether single or multiple story construction is desirable. The process is such that gravity flow is not an important advantage.

The presses and other machinery used are heavy, and operate at fairly high speed. This means floors must be proper for heavy loads and that the entire structure must be built solidly to withstand vibration.

Separation walls between departments are necessary.

All of this leads to standardizing upon building type. Then, management comes into the picture on the question of exterior appearance. Estheticism rears its ugly head. But appearance of the building exterior for sales appeal, or to improve morale, will not alter the basic plant requirements.

Because the floors will be subject to hard usage, caused by rolling or dragging heavy machines over them, also because considerable trucking is necessary, a concrete floor treated with a hardener is indicated, excepting in the keg-lining and lithographing departments.

Lithographing on metal is similar to printing on paper. The color and design are applied in one or more passes, after which the sheets pass on a conveyor through a drying oven. Here, a more resilient and dustless floor is required similar to impregnated wood block, which is smooth, dustless, and resists chipping or damage by falling objects.

L. W. Kattelle, member of the Board of Examination, read the Board's report on the General Correlating Committee. At his right are W. C. Wagner and Admiral Hussey.

Ducts and fans are required to remove fumes and smoke from the drying ovens, and for comfort. Close temperature controls are required for the lithographing, as well as keg-lining operations. Otherwise, the heating requirements vary widely.

Lighting requirements also vary widely according to the uses of the various departments.

All of this has been mentioned in detail to show how effectively the process requirements dictate the choice of construction types adopted.

Even the geographic location of the plant affects the choice of materials of construction. For example, we have the same identical operation in the same equipment in Northern Wisconsin in a tightly enclosed, well heating building; in Alabama, in a four post and roof type building; in Chile, because of high velocity, local winds from the same direction daily, with a shelter wall on one side only; in Brazil, under God's blue sky—no walls, no roof.

Recently, while designing and building an acid and commercial explosives plant in Brazil, we were not able to purchase standardized sash from manufacturers, so our wood and steel sash were made to our own designs.

By standardizing upon such a simple thing as size of window glass making all lights the same dimension, we obtained a reduction in cost in the amount of \$4,000 U.S. In addition, we reduced the inventory of spare lights. Try to do this in the States, even with our domestic sash standardized by each manufacturer. A recent study of one standard steel sash by one manufacturer shows four glass sizes are required.

By standardizing one size swinging door, and one size sliding door, we were able to reduce spares and made reductions in cost of \$7,000 U.S. for hardware.

By making all swinging doors the same size and with the same swing, we avoided many delays from having a left hand swing door with only right hand lock sets at hand. With hardware stores around the corner, this may not be important, but with lock sets coming 6,500 miles with all the attendant shipping mishaps and delays, it is. I ask if any of you have ever made a hardware take-off for even the house or apartment you live in? Weren't you surprised at the number of items required and the need for a little more standardizing?

Standardizing further on small items. This time acid pumps. We adopted one style and size horizontal and one size and style submerged vertical. The type located inside an



acid tank. We were able to make great reductions in stores inventories. One spare pump of each, plus half a dozen bearings, one casing, two shafts, and two impellers were all the spares required.

As the head or capacity varied, the lathe in the machine shop could be called into use for changing impeller diameters. The same plant built before we were so actively interested in construction standardization would probably have had as many different pumps as there were differences in delivery rates and pumping heads; probably as many as eight different acid pumps; and perhaps, pumps from as many as three manufacturers. This pump standardization saved over \$8,000 U.S.

Another example of small items—electrical pull boxes. No branch of engineering is much further advanced “standards-wise” than the electrical. But, we do not always take full advantage of them. Electrical pull boxes are always a problem on domestic, as well as foreign construction. The design always seems to call for a size not yet received. By limiting the number of sizes of pull-boxes to a minimum and purchasing standard sizes, much time can be saved. During a fast moving construction job, the mere fact that you can keep the men going, may many times save more than can be saved by sizing pull boxes to the number of wires they are to contain.

Still another example—heat exchangers which are purchased against specifications on a complicated chemical plant can mean that each heat exchanger will require a different diameter or length of tube. Stores stock containing tube nest replacements can require as many sets as as there are heat exchangers on the plant. By standardizing on one diameter and length of tube, the heat exchanger shell may vary in over-all diameter, but the Stores inventories will be much less with little, if any, difference in the cost for the heat exchangers.

We must never forget that money tied up in stores inventories is as securely tied up in cost as if it were a part of the construction expense.

In the South American countries, the engineer must learn to build with the materials at hand. Recently, we were shocked to learn of the tremendous damage in Ecuador from earthquakes. The pictures portray that the buildings suffering most were of the old colonial type, similar to those suffering most in our own San Francisco “Fire” (being Western).

The engineers down there, not being subject to the same code restric-

tions that we face, have done some very unusual and brilliant work. In Brazil, cement is manufactured, but until recently, no steel was produced. When the national steel mill “Siderurgica Nacional” was built, the mill buildings were constructed with monolithic columns, trusses and purlins, poured continuously. The span is 225 feet, height to craneway 40 feet, height to lower chord 67 feet, with bays 30 feet centers. All sections used were very thin by our code restrictions.

Architect Niemeyer’s Department of Education Building in Rio—fourteen stories—runs up columns tied at the base and top by very deep but very thin girders with light girder beams at each floor and with 30 foot bays supporting 3” thick slab floors. The two end walls are solidly filled in with brick. The two side walls are supported from cantilevered floor beams and are of glass with a specially designed ventilating louver arranged to provide shade on the north side toward the sun.

It is a beautiful building and has been written up in all our architectural journals. Each engineer when taken to view the building has been astonished at the thin members and everyone has remarked “We could never do this in the States with our present building codes.”

We used Niemeyer’s “Chassis,” a post and beam design, on the construction of two warehouses, saving \$40,000.

The Argentinian engineer as well is a specialist in concrete design. We had a long building with a multiplicity of bays and were very much surprised to learn that we could save \$85,000 by using their vault design with a  $2\frac{1}{2}$ " slab sprung as an arch from bay to bay. Bays were on 30 feet centers and the slab was sprung from 6" x 15" beams extending from column to column.

In Chile, where their record of earthquakes is seven per week with two each year force 8, and one every two years of force 9, they use about the same column section we do with beam sections about the same depth but much narrower, and permit  $2\frac{1}{2}$ " and 3" slabs on up to 30 foot spans.

We could not build anywhere in the States using these designs, al-

though the Concrete Institute has advocated for years stresses they have adopted.

You may remind me, as have my associates, of the collapse of the 14-story apartment house in Rio which killed 42 people. I lived within two squares of and was on the site less than ten minutes of the collapse, and know the story intimately. The failure was not one of faulty design. No code refinement would have prevented the collapse of this particular building. Inspection of the aggregates and admixtures would have.

Fires and accidents don’t “just happen.” They are caused. It is best before passing judgment or jumping to a conclusion to obtain the facts surrounding the incident; then, do something to prevent a re-occurrence of the cause, but make what you do as simple as possible. All too often directives are issued and even laws or regulations passed putting in service some protective measure, which later requires additional protection to protect the original protection. It is most generally wise to follow established well-known practices. But don’t blind yourself to well-thought-out proven new devices or new processes, new standards if you will.

Frank B. Jewett, President of the National Academy of Science, once said:

“A proper engineering or industrial standard is a temporary statement which includes all that is really essential of proven current knowledge needed to define the thing standardized. It is a specification which can be met in current commercial practice and a tool by which the art can progress. It carefully excludes everything which is nonessential in order to insure maximum latitude alike to the developer and user.

“Industrial standards are different from the standards of science—such as the unit of time or of weight. These absolute standards if accurately determined and readily reproducible are absolute in a very real sense—they are ordinarily not subject to change with advancing knowledge. They are the scale by which we measure it.

“Industrial standards are akin to the hypothesis of the scientist. They define our present state of knowledge and they live only so long as they continue to define adequately.

“To the nontechnical this difference is not generally understood, and from the misunderstanding arises much difficulty. To them the word ‘Standard’ has come to denote something fixed-final and generally desirable. They instinctively resent anything which seems to cast doubt on

## **SAVE THESE DATES!**

*Annual Meeting of the American Standards Association November 27, 28, 29, 1950.*

its paternity and they impute base motives to all who advocate change, despite the fact that changing industrial standards are the very hallmark of industrial progress."

How well Dr Jewett's definition of an industrial standard applies to some of our code problems today.

In our little story of the plant to produce the lowly beer can, we see how the needs of an industry dictates types of design. Yet such a plant might be built in a location where the engineer would be circumscribed in his work by a 25-year-old building code.

Many building codes, depending upon use, occupancy, size, location, and other factors, require building walls of semi-fireproof construction, further described as meaning the exterior walls and wall panels must have a fire resistance rating of not less than four hours. The same codes permit as much as 60 per cent of the wall area to be of steel sash with a fire resistance rating of one hour. This inconsistency means that all structures to comply with such a code must have higher cost walls (4-hr walls). These involve higher weights and require heavier foundations, structural supports, as well as more material for the walls, all of which involve higher construction costs.

Another code requirement requires the installation of skylights or windows in every stairway or elevator shaft extending above the roof to the extent of 75 per cent of the area of the shaftway. Hotel fires of recent years bear mute evidence of the incorrectness of this requirement—a source of complaint of engineers and the scientific societies for years. The Underwriters Code of 1949 reduces the required area to 10 per cent (does not eliminate it), but practically all State and municipal codes still require the 75 per cent area. Industry must build to the code or be cited for violation. We know in these cases the code is wrong. This sort of example can seriously affect industry's stake in plant construction investments.

The lack of definite classification for hoists, dumb-waiters, freight elevators as well as passenger elevators, causes industry much extra cost, because in most codes they are all classed as elevators and require a multiplicity of controls. Such things as top and bottom limit switches, extra pit depths, automatic gates, and a miscellany of automatic controls on hoists and dumb-waiters add to plant investment for industry. The American Society of Mechanical Engineers has a tentative revision now published for comments which will go a long

way to correct this. But, codes dating back to 1880 and 1894 are facing industry today and must be altered before industry can obtain any benefit from even these new recommendations of the ASME.

Practically all codes require that all floor openings, unless guarded by permanent enclosures or full-height temporary barriers shall be covered with substantial temporary flooring, or guarded on all sides by substantial railings four feet high set at least two feet from the edges of the opening and by a toe board not less than six inches high. This means and has been interpreted by code authority to require elaborate protection around equipment, operating platform stairways less than four feet high, pipe sleeves and many other points where it is impossible for a man to fall through. Therefore, the operators climb over railings to obtain access to valves and controls. Our criticism of this requirement is its lack of flexibility. Variations should be permitted taking into consideration such things as layout, operating conditions, fire hazard, occupancy, type, area or height of platform opening. Considerable extra expenditures are made each year to meet requirements often unnecessary.

Have you ever tried to standardize such a simple thing as a cast iron manhole cover? We have, and finding ASA A35.1-1941, entitled Manhole Frames and Covers for Subsurface Structures, felt we had at last solved our problem. We noted the sponsors were the ASA telephone group and the American Society of Civil Engineers.

Despite the fact this standard was started in 1924 and adopted in 1941 with such organizations as the American Foundrymen's Association, the Grey Iron Founders Society, National Founders Association, and even the Department of Commerce Bureau of Standards and Division of Simplified Practice behind it, we have to this moment been unable to locate anyone who can furnish manhole covers to the ASA standard.

Apparently, this is a difficult problem gentlemen; this problem of casting a satisfactory manhole cover. Because notwithstanding the Bureau of Standards and the Division of Simplified Practice participation, we are offered standard manhole covers furnished to 13 government agencies.

The Public Building Administration, U.S. Veterans Administration, and the Treasury Department differences in standards we can appreciate perhaps. But, why does the joint Army-Navy standard differ from the Navy standard? The Philadelphia

Navy Yard, of course, has special requirements differing from the Brooklyn Navy Yard. The Naval Academy couldn't use manholes used at West Point. Nor could the Engineer Corps use the same manhole cover as was used by the Constructing Quarter-master.

The Civil Aeronautics Administration has three standards we know of—one for LaGuardia—one for National Airport, Washington—and one for Hickam Field.

Even the city of Philadelphia standard cannot be used by the Philadelphia Electric Bureau or the Philadelphia Water Bureau.

There are standards for New Jersey Highway Department, Pennsylvania Highway Department, Delaware Highway Department, Maryland Highway Department, etc.; cities of New York, Philadelphia, Detroit, and Chicago. None agree.

As it looks from our angle, having talked with standards men from other industries, American industry has a greater interest in the savings to be obtained from such a simple standard than do the associations who manufacture them.

Industry must go on using its own standard, or purchase the standard for the city or state in which the new plant is built.

We could go on and on to cite many additional examples, all pertinent to the subject, but am sure these are ample to illustrate the reason engineers appreciate the need for unrelenting attention to the problems which affect cost for building and maintaining the plants for American industry.

Few state or municipal codes have kept in step with advanced knowledge or practices advocated by the various scientific societies. Most still retain the old low stresses for materials of construction. In the meantime, industry is required to continue with the use of stress factors known to add millions of dollars to plant costs each year.

On the other side of the discussion, the City of Cleveland, Ohio, has as of June 27, 1949, not only brought its building codes into line with practices advocated by the various scientific societies to meet the present-day requirements, but has set up means to keep the code currently up-to-date. The new code discards many outmoded and obsolete practices, some of which date back to 1880.

Outstanding examples of looking to the future are two items of real interest to construction of industrial plants. The new code permits the use of any material or construction method meeting specified functional

requirements, using nationally approved specification standards as bases for acceptable materials and construction procedures.

It also widens the permissible design stresses for structural steel, reinforcing steel, plain and reinforced concrete.

It is an excellent example of constructive effort.

The productive capacity of this country in both heavy and consumers' goods depends upon economies effected in cost for the construction, maintenance, and operation of our industrial plants. The greatly increased cost of plant construction is curtailing expansion which is badly needed to meet the demand for these goods.

Despite the current backlog of construction, there is increasing evidence that these increased construction costs are approaching the point where they are destroying any hope for adequate profit considering the risks involved.

Ultimately, the well being of the world depends upon the success of the United States' economy during the next 10 to 20 years. The cost of construction affects industry's part in their contribution to our Nation's economy. If present trends continue far enough, the end point may well be disaster for industry and the National economy, and may even affect our political freedom.

Industry's part in meeting the challenge has been in the development of new products and the larger production of standard products. In the development of new products, new materials which either did not exist or were not in commercial production 20 years ago, we have the new plastics, cellophane, nylon, "Orlon" acrylic fiber. We have new methods for synthesizing ammonia, new methods for the extraction of many chemical products from the crude oils, and the single-step continuous steel casting development which will go a long way toward reducing the heavy investment now required for ingot production, soaking pits, and blooming mills.

Wherever you turn, industry has dramatic new ways of doing things. Using oxygen by the ton, steelmakers are increasing the production from blast furnaces by 20 per cent. New high-speed machine tools are doing three times the work of 1940 tools. A new coal mining machine multiplies a miner's daily output 10 times. Diesel locomotives do the work of three steam locomotives; and now the new gas turbine locomotive, even more powerful, cheaper and more simple to operate.

Two million Americans will get new television sets this year. Auto-

matic washing machines, electric dishwashers, garbage disposers, home freezers, are all examples of the new products—new products of America's industry, which make America a better place to live. In the next generation, American industry can raise our already high standard of living another 50 per cent. Industry of no other nation has done so much, or can promise its people so much—and deliver on that promise.

Industry meets the challenge of economic necessity with technical development. While we all have contributed our part to the perfection of these developments, we must expend still more thought, effort, and planning to obtain the most economical design and construction of the plants to produce the products of these new materials. We must do it, never forgetting the prime objective of any plant is to produce the best quality product possible. No manufacturer can successfully hope to stay in business very long without proper regard to quality of product.

Planning of industry, whether it be for the construction of a new plant, modernizing an old one, maintaining the existing plant or even management planning can be autocratic. Even on small plants, far better results will be obtained by democratic planning with all of the interested parties participating.

This applies equally to the selection and adoption of standards. Standards for plant construction or even management standards cannot successfully be compulsory standards imposed from above and enforced with a "big stick". They must be de-

veloped, based upon the best knowledge of all concerned. Those who have helped to develop a standard will use it, even though they have compromised in their ideas while doing so.

Standards as they are developed must be economic, not uneconomic. They should only be developed to provide an economic gain.

Standardization is dynamic not static, particularly during these times of rapid changes and developments. New materials and new processes require different considerations and approaches.

Mechanization, use of the modular systems, repetitive operations, use of pre-stressed concrete, more fully developed designs, construction schedules, prefabrication of units for assembly line technique are all valuable tools for standards men, and can all be utilized to make economies in construction.

Industry needs sensible building codes and far more intelligent and liberalized fire and safety codes.

Engineers are as a rule very cautious. My short experience in standards work leads me to believe standards engineers are even more so. The standards engineer, above all else, must be clear thinking, have vision, imagination, and be sure enough of his footing to step out with practical and economical standards rather than with conservative standards.

Probably specification writing pays the greatest return for the effort expended. Specifications can be cost makers. They should be cost savers. Standard specifications with which

(Continued on page 332)



## 25 Years ASA Service Award . . .

President Jolly congratulating Dr John Gaillard (right), mechanical engineer on the ASA staff and lecturer on standardization at Columbia University, on 25 years of service with the American Standards Association. Presenting a \$25 war bond to Dr Gaillard, Mr Jolly said: "Although this is not a very large piece of paper, we present it to you with our great appreciation and hope you will have another 25 years on the ASA staff."

# How to Use the Standard for THIN Sheet Metals

by I. V. Williams

**I**N 1941 when the American Standard on preferred thicknesses of thin flat metals was introduced it was hoped that its adoption would do away with the multiplicity of gage systems that had grown up over the past centuries. Above all it was hoped that this would not be just another gage system.

The Bell System experience with the preferred number series I believe to be typical of those of most companies that have made a serious effort to introduce this gage system. It was proposed in 1939 that the Bell System adopt a series of standard thicknesses for flat rolled low carbon steel. Such a gage system was needed, since the gage systems in common use differed depending upon whether the product was purchased as sheet or strip. The designers were not concerned with the form in which the steel was purchased and so it was decided to adopt a series of sizes to apply to both sheet and strip. This work was going on at about the same time as the work in the American Standards Association which led to the adoption of the preferred number series. It was decided to adopt these numbers as standard thicknesses and in February 1941 the use of the American Standard preferred number series for all low carbon sheet and strip was authorized. The plan was that on all new drawings for low carbon steel originated after that date these thicknesses would be specified. Parts already in production would be changed at the convenience of the manufacturing department.

This plan was later extended to the copper base alloys. In this case the need was not so great, since these materials were all purchased to one gage system, the American wire gage. Also the change from the old sizes to the new was not great, particularly in the thinner gages. During the post war period and in the later

prewar period we found this scheme very helpful in aiding our substitution program. In order to continue in production at all we had to substitute one metal for another in many instances. It was a great convenience to have these metals all rolled to the same thicknesses so that it was not necessary to recalculate clearances and build-ups every time a change in material was made.

This plan has worked well as applied to Bell System apparatus made in our own plants where the quantity of material used is large enough to justify mill orders. There have been, however, two difficulties which render the results far from perfect. The first and most troublesome of these applies to materials purchased in comparatively small amounts. This trouble is particularly prevalent when apparatus is subcontracted to smaller manufacturers. We find that in these cases material is usually purchased from warehouses and must be purchased to one of the older standard gages. For this purpose we have made up a table of gage sizes showing the nearest gage sizes in each of the other gage systems to the ASA preferred sizes. The manufacturing department is then given permission where necessary to use these other gage sizes or to permit their subcontractors to use the other gage sizes. This has the effect of greatly widening the tolerances permitted in manufacture of apparatus. It is in this area that we experience our greatest difficulty and in which the greatest benefits could be obtained if the American Standard preferred thicknesses were universally adopted.

The second difficulty is entirely due to economic interests. The break points on pricing schedules are based

on gages other than ASA, with the result that if the ASA gage sizes are used, in many instances a price penalty is paid for variations of a few ten thousandths of an inch from the old established gage sizes. If 0.014 in. is specified for cold rolled steel a penalty of 20 cents a hundred weight is paid over the price charged for 0.0142 in. steel. Likewise if 0.112 in. steel is ordered a penalty of 10 cents a hundred pounds is paid over the price of 0.1121 in. steel. An even greater penalty may be required for some of the non-ferrous metals. If nickel-silver is ordered to a thickness of 0.050 in. a penalty of \$1.12 per 100 pounds is paid over the price of 0.0508 in. nickel-silver and this price penalty includes the allowance for the greater weight of material when ordered to the B and S gage size.

While we would like to use the American Standard preferred sizes it is difficult to persuade the purchasing department that the difference in gage size of 1 to 8 ten thousandths justifies the increase in cost of raw material. Therefore, we continue to buy a few items to the older gage size where the price penalty is appreciable.

The Bell System experience seems to parallel that of other companies who have tried to introduce this number series. H. W. Robb of the Standards Division of the General Electric Company wrote to J. R. Townsend on April 4. I will quote two paragraphs of his letter.

"As you probably know, we have been very interested in the use of the preferred thicknesses and we have recommended their use on drawings. In mill purchases there is only a minor annoyance in adjustment of ordering size to avoid extra costs due to breaking points in size extra brackets. Otherwise mills are perfectly willing to produce any decimal thickness that is specified.

"However, difficulties are encountered in warehouse purchases in the present distribution of material and in the expanded operation of our many small and scattered manufacturing plants. We have been asked, therefore, to do what we can to secure adoption of the ASA preferred sizes."

The aircraft companies have been making a concerted effort to bring about the use of the ASA thicknesses by the warehouses supplying their materials. On November 23, 1948 a meeting was held between members of the Eastern Division of the National Aircraft Standards Committee and numerous steel warehouse representatives to discuss the use of the

*I. V. Williams was graduated from the Pennsylvania State College in 1926 with a degree of Bachelor of Science in Electrochemical Engineering. Upon graduation he went immediately with the Metals Engineering Group of the Bell Telephone Laboratories with which he has been associated ever since. He has been in charge of this group since 1942. He is a member of the American Society of Metals and the American Society for Testing Materials. He is active in the latter organization as a member of Committee A1 on Steel, A10 on Stainless Steel, The Advisory Committee on Corrosion, The Coordinating Committee on Non-Ferrous Metals and Alloys, and chairman of Committee B7 on Light Metals and Alloys.*

ASA thicknesses for 4130 steel. Agreement was reached for adoption of ASA sizes up to 0.160 inches. The aircraft companies agreed that until present stocks were exhausted they would accept certain manufacturers' gage sizes as substitutes for specified ASA sizes. The warehousemen in turn agreed that they would stock material to ASA sizes when they placed new orders on the mills. Similar action has been taken by the aircraft companies with regard to stainless steel sheet by both the East and West Coast groups. It is expected that the National Aircraft Standards Committee will request the adoption by both Air Services of the ASA preferred thickness standard for all aircraft specification sheet and strip.

Some such approach seems to be necessary if we are ever able to obtain all the advantages of a single series of thicknesses. At present the status of the American Standard preferred number series might be pictured as two small boys on horseback rapidly spurring their horses in pursuit of each other—only the horses are on opposite sides of a merry-go-round.

The producers take the position that they will supply any thickness that is ordered. However, warehouse catalogs list AWC gages for copper base alloys, BWG gages, or Manufacturer's Standard gage for steel, U. S. standard gage for stainless steel, and a variation of the AWC gage for aluminum. The consumer naturally interprets this to mean that these are standard sizes and orders accordingly. If he is a small consumer and must rely on warehouse stocks he has no alternative. So orders continue to arrive at the suppliers for the old established gages and the producers cite these orders as their justification for continuing to treat the present established gage system as being the one requested by the customers and therefore the one which they will continue to supply to warehouses. As a result the merry-go-round goes happily on its way.

An opportunity to establish use of the American Standard sizes in one industry was missed when the Army-Navy Aeronautical Board set up the standard sizes for aluminum sheet and strip in August 1942. These sizes are identical with the ASA sizes up to 0.040 in. and only vary by not more than 0.002 in. up to 0.125. It was unfortunate that they did not adopt the ASA sizes.

If any further progress is to be made toward the universal adoption of these standard thicknesses it will be necessary to shift the initiative



I. V. Williams, the author, is pictured here (center) with Thomas J. Finan (left) and S. H. Watson, chairman of the Company Member Conference.

from engineering to sales, purchasing, and management. Most engineers seem to agree that one gage system is desirable but they are powerless to do anything more than they have already done. Purchasing has helped in those areas where mill purchases can be made without a price penalty. However, no purchasing agent will pay extra money for metal nor will he accept late deliveries just to buy to a standard gage size. If we are ever to reach the stage where we will have one standard gage system for all flat rolled metals it will be necessary for two steps to be taken. First, warehouse stocks and company catalog will have to list materials in the ASA

sizes or at least will have to indicate that these ASA sizes can be obtained on comparatively short notice. Second, break points in pricing schedules will have to take cognizance of the ASA sizes so that material can be purchased to these sizes without paying a penalty for a few ten thousandths of an inch variation from some older gage sizes. I believe the benefits inherent in a single gage system to both producer and consumer are great enough to justify these changes. In conclusion it appears that it is only by management level agreements between sales and metal production on one hand and purchasing and parts production on the other that it will be solved.

## Industrial Safety Program To Be Studied by Group

The Safety Code Correlating Committee has announced appointment of a committee to review the safety program under the procedure of the American Standards Association and to recommend changes or additions that might be needed to carry out the recommendations of the President's Conference on Industrial Safety. Members of this committee are:

H. L. Miner, Manager, Safety and Fire Prevention Div., E. I. du Pont de Nemours and Co., Inc.  
W. R. Smith, Safety Engineer, Public Service Electric and Gas Co.  
W. F. Weber, Hazards Engineer, Western Electric Co.  
F. G. Wilson, Assistant Director, Dept. of Safety, American Petroleum Institute  
D. T. Mould, Safety Director, General Motors Corp.

J. F. Grimaldi, Director Industrial Div., Accident Prevention Dept., Assoc. of Casualty and Surety Cos.  
C. G. Krueger, Deputy Director, Div. of Labor, New Jersey Dept. of Labor  
E. B. Landry, Safety Director, Office of the Postmaster General  
W. G. Marks, Chief Safety Engineer, Bureau of Labor Standards  
F. S. McElroy, Acting Chief, Industrial Hazards Div., Bureau of Labor Statistics  
J. M. Roche, Manager, Industrial Dept., National Safety Council  
H. B. Duffus, Supervisor, Accident Prevention Service, Westinghouse Electric Corp.  
W. P. Yant, Director of Research and Development, Mine Safety Appliances' Research Laboratories  
L. G. Hines, Special Representative, American Federation of Labor  
A. S. Johnson, Vice-president, Manager Engineering Dept., American Mutual Liability Insurance Co.  
R. C. Sogge, Manager, Standards Div., General Electric Co.

THIS is a particularly important moment for looking into the future, while evaluating the past, to determine if ASA today is taking all necessary steps to make maximum service possible over the years to come.

The year 1949 has been a very profitable one in the work of the Standards Council. This applies to production, organization, procedure, and promotion. *Production.* During the year October 1, 1948, through September 30, 1949, the Standards Council, by action of the Correlating Committees, Board of Examination, and Board of Review, has approved 184 standards as American Standard. Forty-two previously approved standards were revised, and six were reaffirmed in their existing form. All of these are important, but some of them have special significance and therefore deserve special mention.

A great standard typical of the importance of governmental-industrial cooperation, and which also is of great significance in regard to its effect on the national economy, is the National Electrical Code. A revision of the code in the form of an extensive supplement was approved as American Standard this year. This standard was developed under the technical procedures of the National Fire Protection Association, the committees of which have been approved as sectional committees under ASA procedure in order that the work as finally developed under NFPA can be brought to ASA for approval as American Standard. In the development of this standard, state and municipal governments are brought into close cooperation with manufacturers, electric power companies, public service agencies, technical organizations, and insurance interests. These groups through their cooperative work are maintaining a national standard which is the backbone of all regulations governing the installation and use of electrical utilization

wiring devices and equipment. This standard is also significant because of the special cooperative relations between governmental and industrial groups in all three countries which took part in its development.

The first edition of the National Plumbing Code governing the construction, installation, and use of plumbing facilities in all classes of buildings was approved this year as an American Standard. Because this standard is in its first edition and because further work is necessary in coordinating points of view of some national groups in regard to specific phases of plumbing regulations, this code has not yet established itself as the authoritative guide for plumbing operations. Its initial approval, however, has served to emphasize the importance of cooperative work and to focus greater attention on the plans which are now being carried forward for the building of a still more widely accepted standard as American Standard.

Much has been said in recent years about the importance of ASA operations to the growing demand for standardization work in the field of ultimate consumer goods. This brings to mind the 40-odd standards for incandescent lamps which were approved as American Standard this year, and the extensive list of proposed standards for electric discharge lamps which are now before the groups concerned for trial use and comment. These standards have been developed by Sectional Committee C78, which was created to provide a means whereby the various lamp manufacturing organizations, users, and others vitally concerned, could provide for the interchangeability of lamps. Such an agency was totally nonexistent in 1916 when this project was initiated.

*Walter C. Wagner, Executive Department, Philadelphia Electric Company, has just been re-elected chairman of the Standards Council of ASA, top governing body in charge of technical work. He has been a member of the Standards Council since 1924, representing the Electric Light and Power Group. During the war he served as Captain, USNR, in the Bureau of Ships, Research and Standards Division, and represented the Navy on the Standards Council. Mr Wagner has participated actively in the growth of the American Standards Association, particularly in the development of electrical standards. Over the years he has been active on international standardization matters and is a member of the U. S. National Committee of the International Electrotechnical Commission. He holds memberships in various engineering societies and has served as a member of the staff of the National Bureau of Standards in the Standards Division.*

## What the Future of the

The work of this committee has also brought about the creation of three additional committees, namely those on Glass Bulb Nomenclature, C78; Electric Lamp Bases and Holders, C31; and Lamp Ballasts, C32. These projects will continue to maintain the complete interchangeability and national use of this equipment.

To go to an entirely different field of activity, illustrating the broad nature of the applicability of ASA operations, I call to your attention the Horticultural Standards which have been approved as "American Standard." These standards, developed through many editions by the American Association of Nurserymen, Inc., were brought this year to ASA for approval as "American Standard" in order that they could obtain true national recognition and be listed in the ever growing and ever widening consistent set of American Standards. The approval by ASA made the standards representative of the ideas of all groups concerned instead of the ideas of only the group which developed the standard. The standards enable purchaser and grower to talk the same language and understand one another's requirements.

The number of new projects undertaken during the year total 16. Like the list of standards approved during the year, these new projects cover many phases of the national economy, introduce further cooperative relationships between government and industry, and introduce work which when completed will have developed national acceptance of standards to be used by all parties concerned. Some of the standards have been brought to ASA by organizations which previously had not used ASA procedure in coordinating the points of view of all groups concerned. This indicates an ever-growing understanding of the significance of ASA operations, which is particularly gratifying.

*Organization.* I am convinced that the ever-growing complexity of the national economy, the necessity for removal of obstructions to the free flow of goods and services, such as rising costs of production, interruption in employment, duplication of effort, or the issuance of requirements of regulatory agencies which are ineffective or unduly restrictive, requires that ASA operations based on fundamental democratic principles and designed specifically for the

# National Economy Demands of ASA Today

by Walter C. Wagner

purpose of advancing the over-all national economy must be well organized and be so readily available that maximum effectiveness is assured.

I can report that by and large, ASA operations as covered by the work of the Standards Council are well organized. The reorganization of the work of the Electrical Standards Committee is an excellent example. In this reorganization, recognition has been given to the growing importance of electronics in the national economy by the creation of a special division of the ESC to supervise all standardization work in the field of communications and electronics, as distinguished from electric power, handled under ASA procedure.

The need for the organization of new correlating committees and possible reorganization of other existing correlating committees has received the special attention of the Council through its Committee on Procedure and the Board of Examination. These studies have been primarily directed to the formation of a miscellaneous projects correlating committee. Coupled with this reorganized activity has been the establishment of the principle that whenever the needs of a particular field of activity require it, special correlating committees shall be created to supervise and plan the activities in those fields. Correlating Committees now functioning are empowered to approve such projects as may be submitted in their respective fields and to plan other new work.

*Procedure.* There is always a great danger in writing revisions of Constitutions, By-Laws, Procedures, and similar documents, that they will become so detailed in content and so rigid in language that they will be increasingly difficult to understand and to apply. It will be to the credit of Standards Council that in 1919, chiefly through studies made by the Committee on Procedure, that the basic procedures have been kept flexible and made even more so. The desirability of keeping the procedures simple and clear in language, and adequate as possible to meet any condition which may arise in the future, has been the basis of most of the actions of the Standards Council on procedural matters this year. In this way the Council has been saying

to all groups concerned that no matter what problem involving the development and approval of standards as "American Standard" may be brought to ASA, it should be handled efficiently under the procedures as they now exist. As long as the consensus principle—the foundation of all ASA operations—is not violated, methods of handling any problem are available or can be formulated within the framework of the present procedures.

*Promotion.* Are ASA operations understood and accepted to the extent that full use of them is being obtained? In answer to this, I feel that I cannot speak as optimistically as I have to the questions on production, organization, and procedure. The 1100 American Standards which are now available concretely show that ASA operations have been used successfully in the interest of the national economy through the correlation of the thoughts and technical opinions of many national groups. Some have been revised one or more times. Others have been reviewed and reaffirmed in their original form. This indicates some degree of understanding and acceptance of ASA operations. I have previously mentioned that this year new groups have brought standards to ASA for approval as American Standard. The headquarters office reports that the dollar volume of sale of printed standards this year will equal that of last year despite the recession in business activities. This really represents an increase in use of American Standards, again demonstrating that ASA operations are understood and accepted.

The reservation in my enthusiasm on promotion activities directly connected with the work of Standards Council rests in the observation that approximately 650 national organizations are participating in the work of 163 sectional committees under ASA procedure and in the belief that practically every one of these organizations is engaged in standardization work under its own procedures, much of it being of interest to other national groups.

I am convinced that if each of the 650 national organizations thoroughly understood and accepted ASA operations, the total number of American Standards would more nearly approach 11,000 than 1,100, because each of the organizations would be using the national clearinghouse for



securing a national acceptance of the standards which they have developed.

The consensus principle is of course cardinal in ASA operations. As members we all agree on this fact, but do we all understand that in so far as technical work in which the government is substantially interested is concerned, ASA is at the moment actually unable to properly establish that a consensus does exist because government stands mute, being unable to vote. Government shows as far as it is able, by taking liaison membership on committees, that it is substantially concerned with the subject matter of standards under development but cannot indicate its acceptance or rejection of the content of the final draft of the standard because of adverse Federal legislation that blocks the way. As long as this condition exists, ASA cannot fully exercise its national clearinghouse functions. The future needs of the national economy demand that every member of ASA and all others interested in seeing that its objectives are fully realized support the actions of the Board of Directors in arranging for suitable remedial legislation in the form of a Federal Charter which has now been introduced in this session of the Congress of the United States. The Standards Council cannot fulfill its functions prescribed by the Constitution and By-Laws until this solution of the present temporary difficulty is found.

Industry must maintain the integrity of American standardization as pledged to the Department of Com-

merce when challenged a few years ago. We owe this to the future well-being and national protection of the people of this great nation. I am confident that during these postwar days of adjustment we shall not fail those whose future depends upon our clear and farsighted thinking of today.

### Modular Building

(Continued from page 311)

all building products and materials is needed to protect their investment.

Every product has its own particular problems—standardization of masonry, for example, presents a different problem from the standardization of a window frame. However, in the modular coordination system, the window frame, the masonry or wood openings, and the sills must all be designed and made in sizes that will fit together without cutting at the building site. For some years, the technical services needed to put this system into effect were provided by the Modular Service Association, financed by foundation and private funds of the late Albert Farwell Bemis, who pioneered the concept of modular products. From 1947-1948 they were financed under a government contract. These funds have been exhausted and the Modular Service Association no longer active.

Standards for specific building products and materials are being developed through Project A62, under the procedure of the American Standards Association and sponsored by the American Institute of Architects and the Producers' Council. Although the Association has been handling the secretarial services for the committee, on a limited and temporary basis, the technical services have been outside its scope.

The new committee was appointed following the October 19 meeting to plan and execute a financial program with the purpose of starting technical services January 1, 1950. It is working under the chairmanship of Harold D. Hauf, editor of *Architectural Record* and chairman of the Joint Committee of the American Institute of Architects and the Producers' Council.

### Dr Georg Schlesinger

Dr Georg Schlesinger, for many years a leader in the national standardization work in Germany, died on October 6, 1949, in Wembley, Middlesex, England. In the earlier part of the century Dr Schlesinger took

an active part in the development of German standards for screw threads, limits and fits, and machine tool components. He was professor of machine tool design at the Charlottenburg Institute of Technology and the author of several books on the design and accuracy tests for machine tools. After having moved to England in the thirties, Dr Schlesinger became Research Director of the Institution of Production Engineers, and in this capacity made an investigation on the subject "Surface Finish," the results of which were published by the Institute and in the United States, by the ASME.

### Highlights of Standards Council Meeting

• • New correlating committee authorized—to supervise work of sectional committees handling miscellaneous projects as proposed by Board of Examination to streamline work—recommendations of new committee will go to seven-man Board of Review for final action rather than to 76-man Standards Council—95 projects now under jurisdiction of Board of Examination will be assigned to new Miscellaneous Projects Correlating Committee—being invited to membership as first step: American Council of Commercial Laboratories; American Gas Association; American Institute of Physics; American Petroleum Institute; American Society for Testing Materials; American Society of Mechanical Engineers; Bureau of Federal Supply; Electric Light and Power Group; and the National Bureau of Standards. Other groups with a special interest in projects under committee's jurisdiction are invited to get in touch with the Standards Council chairman.

• • Building Code Correlating Committee being asked to take on building materials standards as well as building code projects; revise its membership if necessary; change its name to Construction Standards Correlating Committee—is to study proposal and report its recommendations to the Council.

• • Two new correlating committees authorized—one on cinematography and still photography, the other on drawings and graphical and letter symbols—will help to coordinate standards in these fields, and assume over-all responsibility for expediting the work.

### ASA Company Members

(Continued from page 314)

on style, size, and format of American Standards, and as chairman of ASA project "Symbols for Electronic Devices," on which he has served most effectively. The high value which those who know him place upon his abilities, their recognition of his rare professional and personal qualities, and expressions of deep appreciation of his friendship when learning of his proposed resignation, all pay just tribute to a great pioneer who has served so splendidly."



Cyril Ainsworth speaking at the Council meeting. W. C. Wagner (right).

• • Board of Examination foresees possibility of need for Paint, Varnish, and Lacquer Correlating Committee.

• • Legality of quoting from American Standards copyrighted by sponsors questioned by company representative in Standards Council meeting—manufacturers making products conforming to standards have quoted standards verbatim in catalogs and advertisements—statement now being used in all American Standards published by ASA says: "Producers of goods made in conformity with an American Standard are encouraged to state on their own responsibility, in advertising, promotion material, or on tags or labels, that the goods are produced in conformity with particular American Standards. The inclusion in such advertising and promotion media or on tags or labels of information concerning the characteristics covered by the standard to define its scope is also encouraged."

# Members Exchange Views on ASA Problems

**T**HIS year's schedule provided the Constitutional Annual Meeting of the Board of Directors and the Standards Council with ample time for free discussion of ASA's problems.

Mr Jolly, as President, opened the meeting with his annual report in which he noted that the chief problems facing him during his first year in office have been financial. He spoke particularly of the methods adopted and carried out fully for the development and approval of the 1950 budget, noting the results of the meeting held on September 30 by the Finance Committee with representatives of supporting organizations. He touched also on the letter which he had addressed to the Member-Bodies in August in which he had stressed the need for action by the Member-Bodies as the owners of the American Standards Association to insure that the ASA was soundly financed.

The President also emphasized the need for an accelerated ASA public relations program, particularly in order that there should be more widespread knowledge of what the ASA is and what it means to industry.

The Chairman of the Standards Council, Walter C. Wagner, presented his annual report, which is published elsewhere in this issue.

The Secretary, Vice Admiral Hussey, in his report noted the steps he has taken in response to the instructions from the Executive Committee to bring current operations in line with prospectively available funds. He noted that while these steps have curtailed operations and while the approved budget for 1950 represents a continuation on the curtailed basis, it was felt that the steps would allow ASA to operate during 1950 in the black instead of in the red.

The meeting being thrown open for discussion, Frank Hoagland of Pratt and Whitney, representing the National Machine Tool Builders Association, made a dramatic presenta-



At the Friday afternoon annual meeting—Frank O. Hoagland, vice-president of Pratt and Whitney Division, Niles-Bement-Pond Company, telling how he uses facts and figures to show what American Standards do for industry in this country.

tion of the value to the mechanical industries of a single standard, citing specifically the American Standard Surface Roughness, Waviness, and Lay.

W. B. Henderson, secretary of the Air Conditioning and Refrigerating Machinery Association, pointed out the difficulties he has encountered in conveying to the membership of his association what the ASA really is, and stressed the necessity for improvement in public relations.

L. A. Danse of General Motors Corporation, speaking as a representative of the Automobile Manufacturers Association, pointed out the necessity for insuring that standards are revised sufficiently often to keep them up-to-date. Mr Wagner stated that the procedures require a review of each standard at least once in every three years, but granted that the sponsors have not complied with this rule in all cases.

R. G. Kimbell, executive secretary of the National Lumber Manufacturers Association, noted that the situa-

tion confronting the ASA is typical of that before many trade associations in that raising funds is becoming increasingly difficult. He too commented on the necessity for spreading a knowledge of the Association among the general public and particularly among those who are in fact benefitting from the Association's work. He stressed the necessity for being sure that new projects presented to the ASA would be adequately supported financially before the Association embarked on them. In this connection, the Secretary stated that effort is made to apportion to each of the industries from whom support is sought a part of the costs of operating ASA commensurate with the industry's interest in the various projects in hand.

Mr Jolly welcomed the comments presented from the floor and noted that the Board of Directors has in hand a project for improving public relations.

The meeting gave instructions as to the ASA's votes for President of the ISO and for a new council member, and decided that the ASA should participate in the Pan-American Standards Committee.

The Secretary stated that there would shortly be placed before the membership the question of whether the United States should seek to have the ISO Council and General Assembly for 1952 meet in America. He pointed out that such a meeting would of necessity involve expenses which could not be met from the ASA's budget and asked that the members present explore with their organization and their companies the possibility of special subscriptions to cover such a meeting. Decision will be required before the American delegate proceeds to a meeting of the Council in Geneva in June or July 1950.

## Nursery Standard Used

Nursery horticultural stock sold by Sears Roebuck in the future will meet the requirements of the American Standard for Nursery Stock, the American Association for Nurserymen, informs the ASA. The Association, which presented its existing standard to the ASA for approval, has had copies of the standard printed for the company's use. Sears' Spring Catalog, 1950, will list its nursery stock in accordance with the American Standard.

*"The members have an investment in the American Standards Association," Mr Jolly told the Annual Meeting of the Standards Council, Board of Directors, and member organizations of the ASA, Friday afternoon, October 14.*

*"It can be protected, and increased in value, if we will—all of us—work just a little harder to get more understanding of what ASA is and what it does to benefit business and the country in general. This will bring more members, more money, and growth."*

## Miss Chapman Is Elected Member Of ASA Board

Miss Ardenia Chapman, Dean of the College of Home Economics, Drexel Institute of Technology, Philadelphia, is taking Mrs Moffett's place as member-at-large on the ASA Board of Directors. Her interest and leadership in development of constructive programs in the field of homemaking have brought her many responsibilities on committees of national organizations, as well as a Certificate of Honor from Stephens College at Columbia, Missouri. Miss Chapman "has been instrumental in effecting a deeper culture and wider social outlook" in the field of homemaking, the citation declares. As a member of the Executive Committee and Program Chairman of the Consumer Advisory Committee of the Philadelphia Chamber of Commerce and Board of Trade, Miss Chapman has an unusual opportunity to bring the homemaker's viewpoint before the local industry groups. She is also a member of the Executive Committee of the Philadelphia Nutrition Council and is Textile and Clothing Consultant of Subcommittee B, Public Assistance Committee, Council of Social Agencies. She has been responsible for Consumer Education Courses in the College of Home Economics, Drexel Institute of Technology, and considers that her most important contribution during her career has been in the development of college programs in home economics.

## ASA to Take Part in Pan-American Standards Committee

The American Standards Association will participate with other American Standardizing bodies in a Pan American Standards Committee, now in process of formation. This decision was taken at the annual meeting of the Standards Council, Board of Directors, and member organizations Friday afternoon, October 14. The objective of the committee will be to encourage standardization in all American countries and to achieve as far as possible common technical bases for standards. It will also encourage the formation of standards bodies where none exists at present. Members of the committee will be the national standardizing bodies where they exist; otherwise, it is proposed that engineering societies may elect representatives until standards bodies are formed. Plans for the committee were drawn up by rep-

resentatives from the national standardizing bodies in Argentina, Brazil, Peru, Uruguay, and the United States (represented by M. E. Souza, General Electric Company, Rio de Janeiro). Representatives from engineering societies in Chile, Cuba, Venezuela, Paraguay, and Ecuador were also present (see STANDARDIZATION, October, 1949, page 266).

## Moffett and Collens Cited For Services to ASA

At its Annual Meeting the ASA Board of Directors took occasion to express its regret that two of its most active members have resigned, and to place its appreciation of their services on record. Mrs Carol Willis Moffett, member-at-large, took office in 1946, but had been closely in touch with the work of the Association for many years before that time. She had been one of the moving spirits behind the standardization activities of the American Home Economics Association. The resolution voted by the Board went on record that:

"It is with deep regret that the Board of Directors of the American Standards Association accepts the resignation of Mrs Carol Willis Moffett.

"For many years Mrs Moffett has served as an extremely stimulating and effective liaison between the consumer groups and the Association. Throughout the last four years, during which she has served as a director, she has, through her broad experience, analytical ability, and sound judgment, contributed substantially to the development of Association policies. She will be greatly missed."

Clarence L. Collens, chairman of the Board of the Reliance Electric and Engineering Company, was one of the first members of the ASA Board of Directors. He was nominated by the National Electrical Manufacturers Association at the time the Board was first organized in 1928, and took an important part in the organization of the electrical standardization work in the ASA. The Board adopted the following resolution:

"In accepting the resignation of Clarence L. Collens as a Director of the American Standards Association, the Board wishes to express its deep appreciation of the many years of outstanding service which Mr Collens has given to the cause of standardization and to the progress of the ASA. Both in the development of the organization and in the solution of its numerous difficult problems, he has been a tower of strength.

"He has had a major influence in determining the policies of the Association. The impress of his wise judgment will be felt for many years to come.

"He has made notable contributions to many worthwhile causes as an executive, as a citizen, and as an individual."

### • • New Appointments to the Standards Council are:

Ardenia Chapman, dean of home economics at the Drexel Institute of Technology, has been appointed to represent the American Home Economics Association.

Edna Brandau of Syracuse University is Miss Chapman's alternate.

Elizabeth Sweeney Herbert is to act as second alternate.

Mrs Herbert is with McCall's Magazine.

George L. McCain, research administration secretary of the Chrysler Corporation, succeeds R. P. Page as alternate for D. C. Fenner.



J. P. Thompson

J. P. Thompson of the Structural and Railways Bureau of the Portland Cement Association has been appointed to succeed A. J. Boase.

• • The Governors' Conference being held at Portland, Oregon, November 30 and Helena, Montana, December 2, will hear Cyril Ainsworth, assistant secretary and technical director of the American Standards Association, speak on behalf of the President's Conference on Industrial Safety. The conferences are being held to consider industrial safety programs as proposed at the President's Conference on Industrial Safety in Washington last March. At that conference the American Standards Association was asked to make recommendations for enlarging its program on safety standards and for speeding the development of American Safety Standards.

# The National Standardization Program—

## Whose Responsibility?

**T**HE men "who sparkplug standardization work in the companies with which they are affiliated" are called on "to assume even greater responsibility for selling standardization to business management," T. D. Jolly, ASA president, told company representatives at the Company Member Conference during the ASA annual meeting.

"As company standards men, you are all vitally concerned with the first three stages" in the standardization process—the company stage, the industry stage, and the national stage—and "many of you are concerned with the fourth, the international stage," Mr Jolly said.

"As president of ASA, I am tremendously concerned with the third, the national stage," he explained, and urgently declared, "I want you to be more concerned about it than you have been. I want you to try to make your managements more concerned about it."

Mr Jolly explained why he is concerned about the need for a more active role on the part of the company members as well as the Member-Bodies of the Association.

### What Mr Jolly Said:

You, as trained technicians in standardization work, know what a chaotic condition the national economy would face if every rail transportation system had its own rail gage, as is the case in some countries of the world. You know and understand the importance of the standard electrical plug and socket, voltage and cycle to the electrical industry and to the millions of users of electrical current and appliances. You know what a national screw thread system, standards for parts, materials, gages and fits, mean to the mass production industries. Instead of having a car in every garage and two along the curb, there would be many communities in the country without any and some with only a few, because there wouldn't be enough people around with the \$50,000 necessary to buy a car manufactured by hand instead of by mass production techniques. You know that specifications for materials used in the manufacture of the products of your company provide a floor of quality, eliminate inferior goods, widen markets, and lower prices. This principle is equally applicable to goods bought over the counter as it is to goods bought by industry.

Not all these standards which have played a part in bringing the na-

tional economy to its present high level have been developed and approved through the use of ASA machinery. Some of them, and many more which time does not permit me to enumerate, have been so developed, amply demonstrating the importance of ASA as a national institution. Before ASA was created, several hundred governmental, technical, consumer, and industrial groups were developing standards with great duplication of effort and little in the way of harmonious results. At least as far as the 1,100 standards approved as American Standard are concerned, ASA has functioned to bring these groups into cooperative relationships, with harmony as the result, and millions of dollars and hours of time and energy saved by elimination of overlapping effort. Many of these standards have been revised several times and many have been reaffirmed, making their original form continuously effective. However, as important as they are, they represent only a fraction of the standards of national significance which should be developed and examined on the national level to function as tools in protecting and further improving the American standard of living.

The ASA is a national institution of which you may well be proud. As far as your companies are concerned, their investment in ASA through the membership which they have obtained should be protected. The 2,100 companies now having membership are the cream of the crop as forward-looking organizations in this important effort so vital to the free enterprise system. I suggest, therefore, that you urge your managements to protect these investments by maintaining the memberships, increasing their cash value if at all possible, and by using every opportunity to encourage other companies in their own industry and in other industries with which they are in contact to become members of ASA.

There is another phase of ASA work that is of special significance at this time and which involves the future of ASA. I refer to the bill which has been introduced in Congress and which if passed will provide a Federal Charter for ASA. You will remember that a similar bill was introduced in the last Congress, but too late to receive attention. The

passage of this bill is, in my opinion, essential to the continued functioning of ASA as the national standards body in this country.

Whatever may have been the original ideas which prompted some to believe that a Federal Charter for ASA would be of great value to national standardization, they become dwarfed in comparison with the necessity of providing a means for full government participation. You recall that practically all ASA operations revolve around the consensus principle. Just so long as conditions exist which prevent a segment of national life from voting on standards which are of substantial interest to them, ASA cannot legally function under its Constitution and By-Laws as the national standards body of the United States of America.

The solicitors of some of the departments of the Federal Government have ruled that such departments can have liaison representation on ASA sectional committees or on committees of other organizations, but cannot vote. This situation will remain until such time as a law is passed authorizing the departments to participate in the work of ASA. Liaison representation in the work of technical societies and trade associations may be entirely satisfactory but these organizations do not have the judicial function of establishing a consensus of acceptability essential to approval as American Standard. ASA has that responsibility. It cannot, however, continue to function as a national clearinghouse and on the basis that a consensus has been shown, approve as "American Standard," standards in which the government does not have substantial interest, then in regard to standards in which the government does have an interest wink at the absence of government vote and declare that a consensus does exist. For thirty years industry and government have worked together in the operation of ASA as a national clearinghouse for standards. That chain of years is now broken. The remedy rests in the Federal Charter, the bill for which is now in Congress.

Again, you can help. Call this situation to the attention of your management. Ask management to spread the word to appropriate influential people that the Charter Bill must

(Continued on page 329)

## U. S. President of IEC Committee Reports on Stresa, Italy, Meeting Held in June

by Dr H. S. Osborne

**W**HILE the initial interest of the International Electrotechnical Commission was directed towards names and definitions of electrical units and the rating of electrical machinery, in the 45 years which have passed these interests have broadened. There are now 36 working committees which quite completely cover the electrotechnical art, including 10 committees devoted to various types of electrical equipment; 5 committees devoted to specific electrical arts, such as electric welding, electro acoustics, and radio telecommunication; 3 committees dealing with prime movers for driving electro generators; and 4 committees dealing with vocabulary, graphical symbols, letter symbols, and electrical and magnetic magnitudes and units. There are committees on overhead lines and on cables, on accumulators and dry cell batteries, and aluminum and insulating oils, and a wide variety of other subjects of importance to the electrical industries.

Until two years ago, the IEC had not been affiliated with any other national standardizing body. When the International Organization for Standardization was formed in 1947 it seemed to all concerned desirable to develop the working relationship between the two organizations to ensure freedom from duplication.

The meeting at Stresa this summer was kept flexible in nature. Six advisory committees held meetings in addition to the Council and the Committee on Action. Fourteen countries were represented by 168 representatives. The United States representation of six consisted of the following: F. M. Clark, General Electric Company; R. G. Larsen, Shell Refining and Marketing, Ltd; George Sutherland, Consolidated Edison Company; C. F. Wagner, Westinghouse Electric Corporation; J. W. McNair, Secre-

tary of the U. S. National Committee; and H. S. Osborne, President of the U. S. National Committee.

The Council gave final approval at this meeting to the revised statutes and rules of procedure which have been prepared since the war. These do not change the organization or methods of working but do set them down specifically, and should help in insuring orderly and systematic procedure. Dr M. Schiesser of Switzerland was elected President. Dr Schiesser is the Director of the Brown-Boveri Company and a very able man of high standing in the electrical industry in Europe. Certain details of the organization of the advisory committees were taken care of and a budget for the year 1950 was approved, together with the allocation of this budget among the member countries. The IEC is currently in some financial difficulty due to the delays encountered in the transfer of funds from what are called the "soft money" countries to Switzerland, the seat of the Secretariat.

Advisory Committee No. 1 on Nomenclature arranged for a limited reproduction of the current edition of the International Electrical Vocabulary, published in 1938 and now out of print, to take care of current demands. They also organized the work involved in a complete revision of this vocabulary. The present vocabulary has definitions in English and French, and terms in a total of six languages. The revised vocabulary will probably include eight.

Advisory Committee No. 10, Insulating Oils, made progress toward the difficult problem of international agreement on oxidation tests for determining the sludge-forming characteristics of transformer oils and on other tests of insulating oils in their various uses for cables, capacitors, and switches. Arrangements were made for representatives of the com-



mittee in several different countries to make parallel tests of samples of transformer oil from all of the countries, these tests to be based on the testing technique and experience of the United States Delegation.

Committee No. 17, Circuit Breakers, is engaged in the formulation of international standards for alternating-current circuit breakers, this constituting a revision and extension of an IEC specification adopted in 1937. The revision of Chapter I, "Rules for Short Circuit Conditions," was completed and referred to an editing committee.

Committee No. 28, Coordination of Insulation, adopted recommended values of impulse voltage to be withstood by the insulation of electrical systems of various nominal voltages from 6,000 to 225,000 volts. The decision was made to divide the work of Committee No. 8, Standard Voltage and Currents and High-Voltage Insulators, between two committees, one dealing with standard voltages and currents and the other with high-voltage insulators.

Committee No. 22, studying standards for mercury arc rectifiers, also met but the United States National Committee was not represented in that work.

The work of the IEC committees, through the broad range of subjects with which they are concerned, is of varying degree of interest to the electrical industry in this country, depending upon subject matter. Whether and to what extent we participate in any specific project is determined by the representatives of that part of industry directly concerned. Active participation involves a substantial interest because historically and logically most of the meetings are in Europe. This means that American industry must pay for the time and traveling expenses of men taking European trips in order to participate in the work.

With the improvements in organization which were completed at the Stresa meeting, I think the work will

*Harold S. Osborne, vice-president of the American Standards Association, is chief engineer of the American Telephone and Telegraph Company, and has been with the Bell System since 1910 in various phases of communications engineering. He is the newly elected president of the U. S. National Committee of the International Electrotechnical Commission. In addition to holding membership in various engineering societies, he is past president of the American Society of Planning Officials; and a director and vice-president of the Regional Planning Association.*

continue to be of even greater effectiveness, and also will continue to be of increasing importance to the electrical industry in this country.

### Whose Responsibility?

(Continued from page 327)

pass. The club spirit will put it over.

If ASA fails, will national standardization cease to be a factor in our economic life? I think not, it is too important to the national welfare. If ASA fails, national standardization will be carried on under the welfare state. I am convinced that the ASA method of operating under the enterprise system through which government, industry and technology cooperate in the public welfare with initiative and leadership assumed by industry, is the way that you and all those associated with ASA want the job done.

Will you help?

## Group to Study Scope of Hygiene Code

SEVEN organizations with an active interest in the health of industrial workmen are serving as a special committee to recommend the scope for a new project to develop nationally uniform industrial hygiene standards. The project, to operate under the sectional committee procedure of the American Standards Association, was authorized at a meeting of the Safety Code Correlating Committee October 11.

The suggestion that a uniform code is needed came from the American Conference of Governmental Industrial Hygienists. At a meeting early this year, the Conference adopted a "Guide for Uniform Industrial Hygiene Codes or Regulations." With its request that the ASA initiate a project for the development of uniform standards agreed upon by all groups concerned, the Conference sub-

mitted this Guide for consideration.

Representatives of 21 organizations attended the Safety Code Correlating Committee meeting to discuss the Conference's request. Because the Guide submitted by the American Conference of Governmental Industrial Hygienists includes sections on illumination, ventilation, personal protective equipment, sanitation, and control of atmospheric contaminants, representatives of sectional committees working on separate standards on these subjects took part in the discussion. The meeting agreed that it would make it easier for industry to protect the health of workers if uniform standards were followed in place of the wide variations in requirements that now exist in different parts of the country.

The American Conference of Governmental Industrial Hygienists and the American Industrial Hygiene Association have been asked to sponsor the new project.

The special conference committee, which has been authorized to consult with other interested groups or organizations and report its recommendations on scope and personnel for the sectional committee, is made up of the following:

American Conference of Governmental Industrial Hygienists  
American Industrial Hygiene Association  
American Association of Industrial Physicians and Surgeons  
American Society of Safety Engineers  
International Association of Governmental Labor Officials  
Manufacturing Chemists Association  
National Safety Council

#### STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC. REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946

OF STANDARDIZATION, published monthly at New York, N. Y., for Oct. 1, 1949.  
State of New York, County of New York, ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Ruth E. Mason, who, having been duly sworn according to law, deposes and says that she is the editor of the STANDARDIZATION and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily, weekly, semiweekly, or triweekly newspaper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Acts of March 3, 1933 and July 2, 1946 (section 537, Postal Laws and Regulations), printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, American Standards Association, Inc., 70 East 45th Street, New York 17, N. Y. Editor, Ruth E. Mason, 70 East 45th Street, New York 17, N. Y. Managing Editor, none. Business Manager, none.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) American Standards Association Inc., 70 East 45th Street, New York 17, N. Y., Thomas D. Jolly, President; H. S. Osborn, Vice-President; George F. Hussey, Jr., Secretary. It is non-profit.

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5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is ..... (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

RUTH E. MASON,  
Editor.

Sworn to and subscribed before me this 8th day of September, 1949.  
(Seal)

LYDA I. GUSTAFSSON,  
(My commission expires March 30, 1951.)

• • Cyril Ainsworth, assistant secretary and technical director of the American Standards Association, has just been appointed member-at-large on the Industrial Conference of the National Safety Council. Members of the Council are chosen to represent a broad cross section of American industry by type and by geographic location. The Conference serves as a technical advisory group on the industrial safety operations of the Council, helps in suggesting and initiating new projects, and acts on research projects. Individual members of the Conference represent the Council on committees of other associations or government agencies.

## What Does It Mean?

(Continued from page 313)

country differ from the standards or practice in the producing country. This situation is most undesirable where the national standards are made compulsory by the government of that country. A current example of this type of situation is the problem met by American automobile manufacturers in marketing cars with sealed beam headlights in Europe, and conversely, the difficulty encountered by British automobile manufacturers attempting to sell in certain states in the United States. Standards can also be used to obstruct international trade when they are adopted by organizations and private manufacturers to exclude the products of other manufacturers from a certain area. However, I am sure that these cases are not very numerous and they constitute abuses of standardization and its principles.

On the other hand, effective international standardization can open up wider markets for American products. By the adoption of dimensional standards the problem of replacement parts and the use of allied products will no longer act as a deterrent to foreign purchasing. Inspection and certification procedures will instill confidence on the part of foreign buyers and encourage sales in new markets. The adoption of international standards of quality and standards of fitness for purpose of performance will also serve to make it easier to sell goods in international trade. Standardization also enables the buyer and seller to speak the same language. It promotes fairness in competition and puts tenders on a comparable basis in international trade. In the field of scientific and technological research standardization is also important in connection with libraries, documentation, and the adoption of uniform terms, definitions, and symbols. Standard methods of sampling and testing are important for research as well as trade.

Since international standardization is almost in the same category as virtue, that is, most people are in favor of it, it should not be necessary to exhort people to participate in international standardization projects. However, like virtue, everyone agrees that it is a good thing, but not everyone takes positive steps to do something about it—they feel that it is especially appropriate for their neighbors. I hope that in pointing out the advantages that will flow from achieving the objectives of our economic foreign policy and in indicating the

role of international standardization in implementing that policy I have established the desirability of taking active steps to achieve international standardization.

**M**EMBERS of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received.

For the convenience of our readers, the standards are listed under their general UDC classifications.

### 534 Vibrations. Waves. Sound. Acoustics

*United Kingdom*

Concert Pitch, BS 880-1949

### 621.2 Utilization of Hydraulic Energy

*Germany*

Seamless Pressure Accumulator for Water Pump, DIN 2753

### 621.3 Electrical Engineering

*Czechoslovakia*

Aluminum- and Steel-Cored Aluminum Conductors for Overhead Lines, CSN ESC 178-1948

*Germany*

Paper Capacitors, 160 to 500 V, DIN 41155  
Brush Holders, DIN 43080  
Portable Three-Phase 50 Cycles Direct Current Motor-Generator Stations Types FUW600 and FUW1200, DIN 43111  
Binding Posts for Storage Batteries of Railless Electric Locomotives, DIN 43569  
Hand Wheels for Control Apparatus, DIN 46055  
Electric Meters, General Rules, DIN 57448  
Instructions Relative to Tools Equipped With Small Electric Motors, DIN 57730  
Instructions Relative Medical Electric Instrument and Apparatus, DIN 57750

*The Netherlands*

Switches, Terminology, N 191  
Sockets, Terminology, N 567  
Plugs, Terminology, N 568  
Fuse Links, Terminology, N 300

*Poland*

Overhead Electric Lines, PN E101  
Underground Electric Lines, PN E102  
Aluminum and Aluminum-Steel Bare Wires, PN E103

*Switzerland*

Insulated Conduits With Longitudinal Lap Joint, SNV 24720

## Standards From

Flexible Ribbed Insulated Conduits, SNV

24721

End Bushing for Insulated Conduits, SNV

24725

Joint Sleeve for Insulated Conduits, SNV

24726

One-Screw Holding Straps for Insulated

Conduits, SNV 24727

Two-Screw Holding Straps for Insulated

Conduits, SNV 24728

Admissible Loads of Lead Covered Low

Voltage Cables, VSM 23888

Synthetic Electro-Insulating Material, VSM

74114

*Union of Soviet Socialist Republics*

Edison Lamp Base, GOST 2520-48

### 621.7 Workshop Practice

*Poland*

Mould Supports, PN H55001-55004

Moulder's Nails, PN H55005

Mould Guide Pegs, PN H55010, 11

Moulder's Tools, PN H55020-32

*Rumania*

Tolerances and Fits, Deviations and Tolerances, Definition, STAS 46-49

Tolerances and Fits, Allowances and Fits,

Definition, STAS 48-49

Tolerances and Fits, System of Fits, Definition, STAS 53-49

*Switzerland*

Welding, Basic Rules for Calculation of

Welded Pieces, Definitions, VSM 14075

Welding, Basic Rules for Calculation of

Welded Pieces, Instructions, VSM 14076

*United Kingdom*

Diamond Dies for Wire Drawing, Non-Reinforced, BS 1168-1949

### 665 Oils. Fats. Waxes

*Poland*

Linseed Oil for Red Lead, PN C81021

Transformer Oils, PN C96058

*Rumania*

Petroleum Products, Qualitative Determination of Mineral Acidity and Alkaline Content, STAS 22-49

Petroleum Products, Determination of Water Content, STAS 24-49

Petroleum Products, Determination of Content of Aromatic Hydrocarbon, STAS 25-49

Mineral Oils, Naphtenic Acids, Greases, Vaselines, Determination of Saponification Number, STAS 27-49

Petroleum Products, Gravimetric Determination of Mechanical Impurities, STAS 33-49

Petroleum Products, Fractional Distillation, STAS 36-49

Bitumen, Resins, Vaseline and Solid Oils, Determination of Dropping Point, STAS 37-49

Petroleum Products, Determination of Ash Content, STAS 38-49

Petroleum Products, Determination of Freezing Point, STAS 39-49

Benzene, White Spirit, Petrol, Determination of Corrosive Effects, STAS 40-49

White Spirit, Refined, STAS 44-49

Extraction Benzene, STAS 45-49

# Other Countries

Gas Oil, Determination of Diesel Index, STAS 50-49  
 Paraffinous Fuel Oil, Uncracked, STAS 51-49  
 Tar for Wood Impregnation, STAS 52-49  
 Mineral Oils, Determination of Emulsifying Degree, STAS 56-49  
 Paraffine, Rehnd, STAS 57-49  
 Paraffine, Determination of Melting Point, STAS 58-49  
 Cracking Fuel Oil, STAS 59-49  
 Toluene, STAS 62-49  
 Benzene, Pharmaceutical, STAS 63-49  
 Boiled Linseed Oil, STAS 16-49  
 Technical Linseed Oil, STAS 18-49  
 Deglycerinated Cake Oil, STAS 19-49  
 Technical Greases, STAS 20-49  
 Oils, Fuel and Gas Oil, "Conradson" Carbon Residue Test, STAS 28-49  
 Petroleum Products, Determination of Flash Point, STAS 32-49  
 Petroleum Products, Determination of Color, STAS 34-49  
 Petroleum Products, Determination of Specific Gravity, STAS 35-49  
 Petroleum Products, Sampling for Analysis, STAS 41-49  
 Solid Oils and Bitumen, Penetration Test, STAS 42-49  
 Aviation Benzene, STAS 43-49  
 White Petroleum Products, Determination of Gum Content in, STAS 49-49  
 Mineral Oils, Determination of "Dean-Davin" Viscosity Index in, STAS 55-49  
 Bitumen, Determination of Softening Point of, STAS 60-49  
 Bitumen, Determination of Ductility of, STAS 61-49  
 Fuel Oil and Liquid Fuel, Determination of Tarring Percentage of, STAS 64-49  
 Bitumen, "Fraass" Test for, STAS 113-49  
 Tar, Special Fuels, Mineral Oils, Determination of Tar Content, STAS 114-49  
 Bitumen, Determination of Substances Soluble in Carbon Sulphide, STAS 115-49  
 Tar and Special Fuels—Determination of Sediments by Extraction, STAS 116-49  
 Transformer and Turbine Oils, STAS 118-49  
 Solid Lubricants and Vaseline, STAS 122-49  
 Kerosine Oil, Rehnd, STAS 177-49  
 Motor Oils, STAS 210-49

## Union of South Africa

Specifications for Dehydrated Castor Oil, SABS 27-1948

## Union of Soviet Socialist Republics

Aviation Oils, GOST 1013-49  
 "Solidol" Grease, GOST 1033-41  
 Lubricating Oils for Automotive Engines, GOST 1862-42  
 "Konstatin" Lubricating Grease, GOST 1957-43  
 Aviation Benzene, GOST 1012-46  
 Petroleum Products, Determination of Sulfur Content, Lamp Method, GOST 1771-48  
 Kerosine Fuel for Tractors, GOST 1842-46  
 Distillation Test of Clear Petroleum Products, GOST 2177-48  
 Petroleum Coke, GOST 3278-48  
 Aviation Benzene (Catalytic), GOST 3784-48  
 Petroleum Products, Density Tests, GOST 3900-47

## 666 Glass and Ceramic Industry. Artificial Stone

### Germany

Laboratory Glassware—High Beakers, DIN 12331

Laboratory Glassware—Medium Beakers, DIN 12332

### Poland

Flat Roofing Tile, Specification, PN B305-1949

### Rumania

Pharmaceutical Flasks, STAS 30-49

### Union of South Africa

Dimensional Specifications for Refractory Brick, SABS 48-1949

### Union of Soviet Socialist Republics

Glass Jars for Preserves, OST 604-607  
 Chinaware for Medicinal and Industrial Use, OST 10522-40 through 10528-40

## 674 Wood Industry

### Germany

Directions for Testing Penetration of Preserving Substance Into Wood, DIN 52618, Be.1  
 Protection of Wood Against Insects, Methods of Test, DIN 52621/2/3

### India

Specification for Plywood Tea-Chests, IS:10-1949

### Rumania

Wood Determination of Moisture, STAS 83-49

### Union of South Africa

Specifications for Fluor-Chrome-Arsenate-Phenol Type of Lumber Preservative, SABS 37-1949  
 Specification for Metallic Naphthenates for Timber Preservation, SABS 38-1949  
 Specification for Zinc Chloride for Timber Preservation, SABS 39-1949  
 Specification for Zinc Meta-Arsenite for Timber Preservation, SABS 41-1949  
 Specification for Pentachlorophenol for Timber Preservation, SABS 42-1949  
 Specification for Acid-Cupric-Chromate for Timber Preservation, SABS 43-1949

### Union of Soviet Socialist Republics

Soft Wood Lumber "Leningrad Assortment," OST 7951  
 Rules for Natural Drying of Soft Wood Lumber, GOST 3808-47  
 Beechwood Lumber, GOST 4369-48  
 Electric Line Poles From Coniferous Stock, GOST 4371-48  
 Coniferous Heavy Lumber for Bridges and Railroads, GOST 4372-48  
 Wooden Blanks for Manufacturing Bent and Pressed Wheel Rims, GOST 4431-48

### United Kingdom

Glossary of Terms Applicable to Timber, Plywood and Joinery, BS 565-1949

## 677 Textile Industry

### Germany

Needle for Bast Thread Spinning Machine, DIN 64105

### The Netherlands

Weavers Reeds, Reed Number, N 1406  
 Weaver Reeds, N 1410  
 Shuttle Boxes for Light Looms With Overpick, N 1476

Shuttle Boxes of Leather for Looms With Underpick, N 1477  
 Weftforks for Light Looms, N 1479

### Switzerland

Weaver's Cone With Its Gage, VSM 31711  
 Chain Cone and Its Gage for Weaving Machines, VSM 31713  
 Rings for Spinning and Twisting Machines, VSM 31715

### Union of South Africa

Specifications for Blankets, SABS 63-1949

### Union of Soviet Socialist Republics

Printed and Plain Cotton Yard Goods (Chintz), OST 30260-40  
 Woolen Yard Goods, Assortment of, GOST 358-41  
 Yarn Used in Cable Manufacture, GOST 905-41  
 Silk Yarn, GOST 1025-48  
 Metal Cloth With Square Meshes, GOST 3826-47  
 Woolen Piece-Goods GOST 4287-48  
 Silk Fabrics for Sieves, GOST 4403-48  
 Automobile Rugs, GOST 4513-48  
 Plush, GOST 4518-48

### United Kingdom

Packaging Felt, BS 1133, Section 11-1949

## 681 Fine Mechanisms, Clocks and Watches. Musical Instruments

### Union of Soviet Socialist Republics

Micrometers, Calibrated to 0.01 mm, GOST 4380-48  
 Lever Micrometers, Calibrated to 0.002 mm, GOST 4381-48  
 Speedometers for Motorcycles, GOST 4400-48  
 Gear-Teeth Tangential Measuring Indicator, GOST 4446-48  
 Thermometers for Low Temperature, GOST 4497-48

### United Kingdom

Sound-Recording and Reproduction, Magnetic Tape Systems for Broadcasting, BS 1568-1949

## 744 Technical Drawings

### Argentina

Technical Drawings: Lines, IRAM 4502-P

### Germany

Technical Drawings for Cabinet Makers, DIN 919  
 Title Blocks on Drawings for Locomotive Shop, DIN 30084

### Poland

Drawing Boards, PN N94001  
 T-Square, PN N94002  
 Triangles, 60° and 45°, PN N-94003  
 Scale Rulers, PN N94004

### Rumania

Technical Drawings: Method of Folding, STAS 74-49  
 Technical Drawings, Sizes of, STAS 1-49  
 Technical Drawings, Scales Used on, STAS 2-49

### Union of Soviet Socialist Republics

Technical Drawings for Spring Representation, GOST 4144-48

# ASA STANDARDS ACTIVITIES

## Status as of November 4, 1949

### American Standards Approved Since October 6, 1949

Dimensions, Tolerances, and Terminology for Cooking and Baking Utensils, Z61.1-1949  
Sponsor: American Home Economics Association

### American Standards Being Considered for Approval

By the Standards Council—

Specifications for Zinc Yellow (Zinc Chromate) (Revision of ASTM D478-47; ASA K50.1-1947)  
Specifications for Raw Linseed Oil (Revision of ASTM D234-28; ASA K34-1937)  
Specifications for Boiled Linseed Oil (Re-

### Industry's Stake

(Continued from page 319)

suppliers and construction contractors can become familiar will reduce costs. Like laws, they must be just and good to be respected.

Perhaps we need more research before adopting a standard. We need certainly lower factors of ignorance and more practical factors of safety. All too often factors are added to factors beefing up design so that structures and equipment last longer than their economic life. As standards engineers, let's be certain to add facts to facts and come up with better and more economical standards.

We must constantly be alert to the improved new products being offered. We must become even more cost-conscious. We must remove the last unnecessary frill from our standards—from our construction. We must examine all alternatives and even prove a structure or a frill incorporated into our standards is economically or technically required.

We are not building monuments. We are building standards—standards by which industry's plants can be constructed. The best engineer for industry does not build monuments. The man who can stand and look at the finished producing plant satisfied that not one frill, not one dollar more than necessary to produce the desired results was spent, will indeed have contributed his share, and will rest secure in the knowledge he has done all within his power to protect American industry's stake in plant construction standardization.

vision of ASTM D260-33; ASA K35-1937)

Specifications for Slab Zinc (Revision of ASTM B6-48; ASA H24.1-1948)

Sponsor: American Society for Testing Materials

Test for Burning Quality of Kerosene (ASTM D187-49; ASA Z11.17)

Test for Neutralization Value (Acid and Base Numbers) by Electrometric Titration (ASTM D664-49; ASA Z11.59)

Test for Oxidation Stability of Aviation Gasoline (Potential Gum Method) (ASTM D873-49; ASA Z11.60)

Test for Congealing Point of Pharmaceutical Petrolatums (ASTM D938-49; ASA Z11.61)

Measurement by Density of Hydrocarbon Liquids by the Pycnometer (ASTM D941-49; ASA Z11.62)

Test for Oxidation Stability of Gasoline (Induction Period Method) (ASTM D525-49; ASA Z11.63)

Test for Existent Gum in Gasoline (Air-Jet Evaporation Method) (Revision of ASTM D381-49; ASA Z11.36-1947)

Test for Vapor Pressure of Petroleum Products (Reid Method) (Revision of ASTM D 323-49; ASA Z11.44-1943)

Test for Knock Characteristics of Motor Fuels by the Motor Method (Revision of ASTM D357-49; ASA Z11.37-1948)

Test for Melting Point of Petrolatum (Revision of ASTM D127-49; ASA Z11.22-1932)

Test for Color of Refined Petroleum Oil by Means of Saybolt Chromometer (Revision of ASTM D156-49; ASA Z11.35-1938)

Test for Sulfur in Petroleum Oils by Bomb Method (Revision of ASTM D129-49; ASA Z11.13-1944)

Definition of Terms Relating to Petroleum (Revision of ASTM D288-49; ASA Z11.28-1948)

Test for Tetraethyl lead in Gasoline (Revision of ASTM D526-48T; ASA Z11.48-1942)

Test for Saponification Number of Petroleum Products by Color Indicator Titration (Revision of ASTM D94-48T; ASA Z11.20-1945)

Sponsor: American Society for Testing Materials

### By the Board of Review—

Household Automatic Electric Storage Type Water Heaters, C72

Sponsor: National Electrical Manufacturers Association

### By the Board of Examination—

Gaging Practices for Ball and Roller Bearings, B34

Sponsor: Mechanical Standards Committee

Free-Cutting Brass Rod and Bar for Use in Screw Machines (Revision of ASTM B16-47; ASA H8.1-1947)

Copper Pipe, Standard Sizes (Revision of ASTM B12-47; ASA H26.1-1949)

Red Brass Pipe, Standard Sizes (Revision of ASTM B43-47; ASA H27.1-1949)

Bronze Castings in the Rough for Locomotive Wearing Parts (Revision of ASTM B66-46; ASA H28.1-1949)

Car and Tender Journal Bearings, Lined (Revision of ASTM B67-46; ASA H29.1-1949)

Copper Water Tube (Revision of ASTM B88-48; ASA H23.1-1948)

Copper-Silicon Alloy Wire for General Purposes (Revision of ASTM B99-47; ASA H30.1-1949)

Roller Copper-Alloy Bearing and Expansion Plates and Sheets for Bridge and Other Structural Uses (Revision of ASTM B100-47; ASA H31.1-1949)

Copper and Copper-Base Alloy Forging Rods, Bars and Shapes (Revision of ASTM B124-48; ASA H7.1-1948)

Brass Wire (Revision of ASTM B134-48; ASA H32.1-1949)

Lead Red Brass (Hardware Bronze) Rods, Bars and Shapes (Revision of ASTM B140-47; ASA H33.1-1949)

Sponsor: American Society for Testing Materials

Shutter Cable Release Tip and Socket With Taper (European) Thread, Z38.7.14-1942

Shutter Cable Release Tip and Socket With Straight (American) Thread, Z38.4.6 (Revision of Z38.4.6-1942)

Picture Sizes for Roll Film Cameras, Z38.4.8 (Revision of Z38.4.8-1944)

Sponsor: Optical Society of America

### By the Consumer Goods Committee—

Definitions of Terms Relating to Textile Materials (Revision of ASTM D123-48; ASA L34.12-1949)

Methods of Test for Asbestos Yarns (Revision of ASTM D299-48T; ASA L14.18-1949)

Methods of Test for Woolen Yarns (Revision of ASTM D403-48T; ASA L14.21-1949)

Methods of Test for Worsted Yarns (Revision of ASTM D404-48T; ASA L14.22-1949)

Methods of Testing and Tolerances for Jute Rope and Plied Yarns for Electrical Packing Purposes (Revision of ASTM D681-48; ASA L14.44-1949)

Sponsor: American Society for Testing Materials

### By the Mechanical Standards Committee—

Cast-Iron Screwed Fittings, 125 and 250 lb. B16 (Revision of B16d-1941)

Sponsors: American Society of Mechanical Engineers; Manufacturers Society of the Valve and Fittings Industry; Heating, Piping and Air Conditioning National Association

### By the Electrical Standards Committee—

Test Code for Step-Voltage and Induction-Voltage Regulators, C57.25

Step-Voltage and Induction-Voltage Regulators, C57.15 (Revision of C57.15-1948)

Sponsor: Electrical Standards Committee

### American Standards Being Considered for Reaffirmation

Test for Viscosity by Means of the Saybolt Viscosimeter (ASTM D88-44; ASA Z11.2-1944)

Test for Carbonizable Substances in White Mineral Oil (Liquid Petrolatum) (ASTM D565-45; ASA Z11.49-1945)

Test for Carbonizable Substances in Paraffin Wax (ASTM D612-45; ASA Z11.59-1945)

Conversion of Kinematic Viscosity to Saybolt Furol Viscosity (ASTM D666-44; ASA Z11.53-1944)

Sponsor: American Society for Testing Materials

### Withdrawal of American War Standards Being Considered

Fixed Paper-Dielectric Capacitors (Home Receiver Replacement Type), C16.6-1943  
Dry Electrolytic Capacitors (Home Receiver Replacement Type), C16.7-1943

Simplified List of Home Radio Replacement Parts (Paper and Electrolytic Capacitors, Volume Controls, Power and Audio Transformers and Reactors), C16.8-1943

Volume Controls (Home Receiver Replacement Type), C16.10-1943

Requested by: Institute of Radio Engineers

### Withdrawal of American Standards Being Considered

Standard Vacuum Tube Base and Socket Dimensions, C16.2-1939

Manufacturing Standards Applying to Broadcast Receivers, C16.3-1939

### Standards Submitted

Recommended Practice for Mechanical Refrigeration Installations on Shipboard, B59

Method of Rating and Testing Refrigerant Expansion Valves, B60

Approval Requested by: American Society of Refrigerating Engineers

Methods of Testing Antennas, IRE-1948; ASA C16.11

Methods of Testing Frequency Modulation Broadcast Receivers, IRE-1947; ASA C16.12

Methods of Testing Television Receivers (Monochrome Service, 6-Megacycle Channel), IRE-1948; ASA C16.13

Color Codes: Numerical Values, Decimal Multipliers and Tolerances, RMA GEN-101; ASA C16.14

Preferred Values for Components for Electronic Equipment, RMA GEN-101; ASA C16.15

Vibrating Interrupters and Rectifiers for Auto Radio: Frequency 115 Cycles, RMA REC-113; ASA C16.16

Sponsor: Institute of Radio Engineers

Industrial Apparatus Control, C19.1

Sponsor: American Institute of Electrical Engineers

Methods of Sampling and Chemical Analysis of Alkaline Detergents (Revision of ASTM D501-46; ASA K60.21-1948)

Sponsor: American Society for Testing Materials

Specifications for Laboratory Standard Pressure Microphones, Z24.8

Method for the Pressure Calibration of Laboratory Standard Pressure Microphones, Z24.4

Method for the Coupler Calibration of Earphones, Z24.9

Sponsor: Acoustical Society of America

### American War Standards Withdrawn

Specification for Projection Equipment, Sound Motion Picture 16-Mm, Class 1 (JAN-P-491), Z52.1-1944

Specification for Test Film for Checking Adjustment of 16-Mm Sound Motion Picture Projection Equipment, Z52.2-1944

Specification for 16-Mm Motion Picture Release Prints (JAN-P-55), Z52.3-1944

Method of Determining Picture Unsteadiness of 16-Mm Sound Motion Picture Projectors, Z52.6-1944

Method of Determining Uniformity of Scanning Beam Illumination of 16-Mm Sound Motion Picture Projectors, Z52.7-1944

Leaders, Cues, and Trailers for 16-Mm Sound Motion Picture Release Prints Made from 35-Mm Preprint Material, Z52.19-1944

Leaders and Trailers for 16-Mm Sound Motion Picture Release Prints Made from 16-Mm Original Material, Z52.31-1945

Whiteness of Projection Screens (Semi-Diffusing Reflecting Surface), Z52.45-1945

Brightness Characteristic of Projection Screens (Semi-Diffusing Reflecting Surface), Z52.46-1945

Picture and Sound Synchronization Marks for 35-Mm and 16-Mm Sound Motion Picture Release Negatives and Other Preprint Material, Z52.53-1945

Direct Finder Aperture for 35-Mm Motion Picture Cameras, Z52.68-1946

Auxiliary Finder Aperture for 35-Mm Motion Picture Cameras, Z52.69-1945

Specification for Registration Distance and Lens Mounting Dimensions for 35-Mm Motion Picture Cameras, Z52.70-1945

Requested by: Society of Motion Picture Engineers

### New Project Initiated

Bare Electrical Conductors, C7

Sponsor: American Society for Testing Materials

## What's Happening on Projects

### Office Standards, X2—

Sponsor: National Office Management Association

*Administrative Committee:* At the October 25 meeting of the Administrative Committee of the Office Standards Project, the scope of work of the various subcommittees was approved. It was agreed that the Administrative Committee should be expanded by the addition of coordinators—members of the sectional committee appointed to act as liaison members of each subcommittee, with the subcommittee chairmen serving as alternates.

Subcommittee 2, Office Papers, had requested instructions from the Administrative Committee regarding quality specifications for paper because of opposition of the American Pulp and Paper Association. As a result, representatives of the APPA and the Writing Paper Manufacturing Association were given an opportunity to state their views. After discussion of the various viewpoints, the Administrative Committee voted that Subcommittee 2 should continue, and should work closely with the paper industry.

The first draft of a Manual of Organization and Procedure for the Office Standards Project was prepared at the direction of the Administrative Committee by the project secretary, Charles Hilton, and H. A. Warner of the NOMA staff. The draft was presented at the October 25 meeting. Following minor additions, the manual will be published by NOMA and circulated to X2 members and cooperating bodies as a guide to the project activity.

*Subcommittee X2-1, Office Equipment (Furniture):* Subcommittee 1 reviewed two draft standards at its October 26 meeting—one, Specifications for Metal Desks and Tables for General Office Use, and the other,

Specifications for Wood Desks and Tables for General Office Use. The subcommittee decided that those two proposed standards could be consolidated, limiting the standard to dimensions only. The proposed standard in its new form will be circulated to the subcommittee for letter ballot. The material referring to light reflectance of top materials originally contained in the metal desk standard will be put into a separate standard, and another separate standard for standard wood finishes will be prepared. Subcommittee 1 is also considering work on light reflectance of surfaces other than tops; wiring of desks for telephones; and nomenclature applicable to office furniture.

*Subcommittee X2-2, Office Papers:* Subcommittee 2 met on October 24 and discussed the comments received as a result of the circulation of the following four proposed standards: Specifications for Sulfite Bond Paper, Type A, X2.2.2; Specifications for Sulfite Bond Paper, Type B, X2.2.3; Specifications for Register Sulfite Bond Paper, X2.2.4; and Basic Sheet Sizes for Bond Papers and Index Bristols, X2.2.1. The proposed standards had been circulated to subcommittee members and the 87 paper mills known to be manufacturing the grades of paper involved. The majority of objections received appeared to be directed at the principle of quality specifications rather than at specific technical requirements. For this reason and because many of the features of the specifications cannot be measured, the proposed specifications are being sent to letter ballot of the subcommittee.

*Subcommittee X2-3, Forms, Records, and Procedures:* The meeting of Subcommittee 3 was held on October 25. The committee discussed three proposed standards previously circulated, covering: Specifications for Bank Checks, X2.3.1; Check List of Printing Specifications for Business Forms, X2.3.2; and Guide to Establishing and Maintaining a Forms Control Program, X2.3.3. It was voted to circulate these proposed standards in slightly modified form to a letter ballot of the subcommittee.

*Subcommittee X2-4, Office Supplies:* The subcommittee, at its October 27 meeting, voted to send the proposed Size Designation for Index Cards and Record Keeping Cards, X2.4.1, to letter ballot. On the basis of investigations, the subcommittee decided to concentrate its efforts on the following projects: Adding machine tapes, rubber erasers, file folders, and ring and post binders.

*Subcommittee X2-5, Business Machines:* H. W. Blood was elected chairman of Subcommittee 5 at the October 24 meeting. Mr. Blood, NOMA's representative, is with the General Electric Company, Apparatus Department, Procedures Division, Schenectady, N. Y. He replaces George V. Vanderbilt who accepted the chairmanship of the Office Standards sectional committee several months ago.

### Code for Pressure Piping, B31—

Sponsor: American Society of Mechanical Engineers

According to word from the ASME, sponsor, drafting subcommittees have been working during the past two months to bring this important American Standard up-to-date. At a meeting of the executive committee of the sectional committee, November 2, the subcommittees reported the revisions that are essential to bring the code into line with present engineering materials and practice. It is expected that the proposed revisions to the code will be in the hands of the ASA before January 1.

## Further Progress with Standardization of Letter Symbols, Abbreviations, Z10—

**Sponsors:** American Association for the Advancement of Science; American Institute of Electrical Engineers; American Society of Civil Engineers; American Society of Mechanical Engineers; American Society of Engineering Education.

Sectional Committee Z10 met in the Waldorf-Astoria Hotel during the early part of the ASA Annual Meeting week. Appointment was made of three chairmen to head new subcommittees. These were: H. Wexler, U. S. Weather Bureau, chairmanship of subcommittee 13 on Meteorology; F. E. Crever, General Electric Company, chairmanship of subcommittee 14 on Servomechanisms; and H. F. Olson, R.C.A. Laboratories, chairmanship of subcommittee 15 on Acoustics.

Reports were presented on the status of work of the existing subcommittees and active discussion following the reports prompted the informal appointment of a group to consider possible revision of the General Principles of letter symbol standardization.

Particular interest was shown in the discussion on current symbol problems in various fields. A. A. Bennett of the American Mathematical Society pointed out the need for coordination and understanding between the fields of research mathematics and engineering on traditional usages of symbols. E. R. Paxton of the National Electrical Manufacturers Association discussed the proposed adoption of the term "Celsius" to replace "Centigrade." (See story on "Celsius" and "centigrade" elsewhere on this page.) The Z10 committee also discussed the need for coordination between its work on Abbreviations in Texts, and the Z32, Abbreviations on Drawings.

## Steel Raceways for Electric Wiring Systems, C80—

**Sponsors:** American Iron and Steel Institute; National Electrical Manufacturers Association

The personnel of this committee has been approved by the Electrical Standards Committee. J. C. Siegle of Youngstown Sheet and Tube Company, representing the American Iron and Steel Institute, is chairman, and W. O. Zervas, American Iron and Steel Institute, is secretary. The committee has three standards, two proposed American Standard Specifications for Rigid Steel Conduit, and the proposed American Standard Specification for Electrical Metallic Tubing, Zinc Coated, well under way. They are to be submitted to the ASA for approval in the near future.

## Safety Code for Exhaust Systems, Z9—

**Sponsors:** American Industrial Hygiene Association; American Society of Heating and Ventilating Engineers; National Association of Fan Manufacturers

At the October 24 meeting of the ASA Sectional Committee on Safety Code for Exhaust Systems, Z9, the comments and suggestions received as a result of the circulation of the first draft of the proposed American Standard Code for Safety and Ventilation of Open-Surface Tank Operations, Z9.1, were discussed. It was voted that the proposed standard incorporating the changes and suggestions agreed on at the meeting be sent to letter ballot of the

entire committee for approval. This proposed standard is a revision and enlargement of the American Standard on Safety in Electroplating Operations, Z9.1-1941.

## Acoustical Measurements and Terminology, Z24—

**Sponsor:** Acoustical Society of America

The sponsor of sectional committee Z24 has submitted three proposed standards to the ASA for approval. In the proposed revision of American Standard Method for the Pressure Calibration of Laboratory Standard Pressure Microphones, Z24.4, an attempt had been made originally to write a standard on the methods of primary calibration of microphones in general. However, it was finally decided to limit this standard solely to pressure and crystal microphones. In the case of the proposed American Standard Specification for Laboratory Standard Pressure Microphones, Z24.8, three types of microphones have been listed together with their necessary characteristics so as to meet the tests outlined in Z24.4. The proposed American Standard Method for the Coupler Calibration of Earphones, Z24.9, describes a practical and reproducible method of evaluating the performance characteristics of an earphone by means of physical measurements of the earphone in conjunction with a standard terminating volume known as a "coupler."

The personnel of Sectional Committee

Z24 was recently approved by the Electrical Standards Committee. Leo L. Beranek, Technical Director of the Acoustics Laboratory, Massachusetts Institute of Technology, was appointed as the new vice-chairman. Vern O. Knudsen, Dean of the Graduate Division and Professor of Physics, University of California at Los Angeles, continues as chairman of the committee.

## Electrical Measuring Instruments, C39—

**Sponsor:** Electrical Standards Committee

A proposed revision of the American Standard for Electrical Indicating Instruments, C39.1-1949, is being put in final form for submittal to ASA Sectional Committee C39. This proposed revision of C39.1-1949 adds the detailed requirements for portable instruments to the standard which had covered panel and switchboard instruments only. Additional definitions and requirements for portable instruments have been included, as well as miscellaneous minor changes. American Standard C39.1-1949 was a revision of the original C39 standard approved by the ASA in 1938. The earlier 1949 edition incorporated those parts of the American War Standard for Electrical Indicating Instruments, C39.2-1942, which were applicable to instruments for use in peacetime industrial applications.

## Celsius Versus Centigrade\*

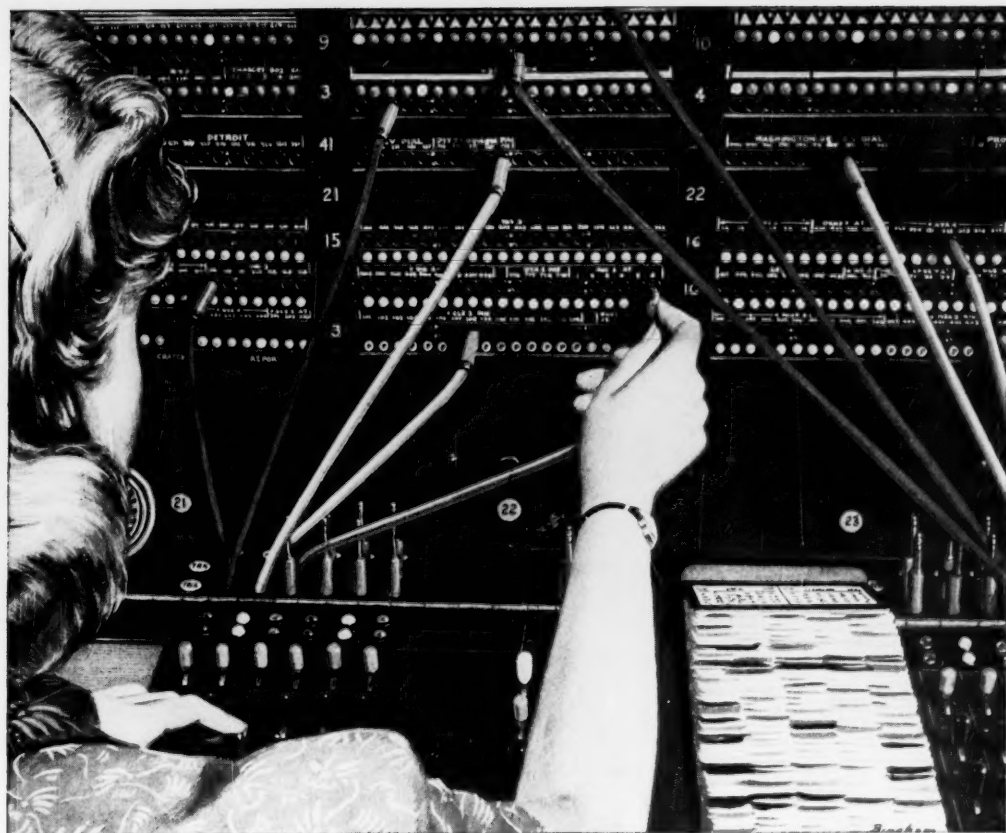
The Ninth General Conference on Weights and Measures, held in October 1913, adopted the name "Celsius" for the scale of temperature that has more commonly been called "Centigrade." This action, which had not been proposed in advance of the Conference, arose from a question regarding preferred usage in French, the sole official language of the Conference. The decision therefore may be considered as applying strictly only to that language. In the interest of eventual uniformity of practice the use of Celsius appears desirable, but it is not practicable to impose this term on those who prefer Centigrade.

In preparation for the General Conference, the National Bureau of Standards submitted a revised text defining the International Temperature Scale to supersede that adopted in 1927. The proposed text was drafted in English, and, in accordance with common English practices as well as the official French text adopted in 1927, it used the name Centigrade. This name was carried over into the French translation prepared for consideration by the Advisory Committee on Thermometry in May 1948. However, in the printed report of that meeting, the term Centigrade had, in most cases, been

changed to Centésimale, the term that is used in the French law governing weights and measures. When asked to choose between the two, the International Committee on Weights and Measures and the General Conference voted to substitute Celsius.

With regard to the merits of the decision it may be remarked that Celsius (abbreviated C) is analogous to the names Kelvin, Fahrenheit, Reaumur, and Rankine used for other temperature scales, that it has previously been used considerably in some countries, and occasionally in America, being included in Webster's dictionary. It might also be argued that Centigrade is logically ambiguous, since the absolute Kelvin scale, as well as the Centigrade scale, has 100 degrees between the ice point and the boiling point of water. On the other hand, the name Centigrade is thoroughly established in English-speaking countries, the need for choosing between that name and Centésimale arises only in French, and the decision on a term in the official French language of the Conference may not be considered as controlling the terms to be used in translating into other tongues.

\* Reprinted in full from the September 1949 issue of the National Bureau of Standards Technical News Bulletin



## What's the connection?

**T**O give you good service, your Bell Telephone company must have good switchboards, cables, telephones, and literally thousands of different types of equipment. Each must be *designed*, then *manufactured*, so that all can *operate* together perfectly in carrying your voice quickly and clearly across the street or across the nation.

Do you know Western Electric's connection with all this? For sixty-seven years, we have

been the manufacturing unit of the Bell System. This has assured a dependable source of good equipment—efficiently and economically produced to meet the needs of telephone users.

- As members of the Bell System, Western Electric people who *make* equipment, Bell research people who *design* it and Bell Telephone company people who *operate* it all work together with one aim: Good telephone service for you at the lowest possible cost.

# Western Electric



A UNIT OF THE BELL SYSTEM SINCE 1882

# American Standards Check List

NO. of Copies	Title of Standard	Price	NO. of Copies	Title of Standard	Price
..... B1.7-1949	<b>Nomenclature, Definitions, and Letter Symbols for Screw Threads...</b> \$ .50  This standard establishes uniform practices for screw thread nomenclature, and letter symbols for designating dimensions of screw threads on drawings and other records and for expressing mathematical relationships. ( <i>Sponsors:</i> Society of Automotive Engineers; The American Society of Mechanical Engineers)		..... Z32.2.1-1949	<b>Graphical Symbols for Welding...</b> .50  These symbols provide the means of placing complete welding information on drawings. ( <i>Sponsors:</i> American Institute of Electrical Engineers; The American Society of Mechanical Engineers)	
..... B28.1-1949	<b>Mills and Calenders in the Rubber Industry, Safety Code for...</b> 1.00  The code covers the safeguarding of mills and calenders at point of operation and includes items of installation and maintenance necessary for safe operation. ( <i>Sponsor:</i> National Safety Council)		..... Z32.2.3-1949	<b>Graphical Symbols for Pipe Fittings, Valves, and Piping</b> .40  With this, architects, engineers, and contractors will have a standard method of indication for pipe fittings, valves, piping, and allied items. ( <i>Sponsors:</i> American Institute of Electrical Engineers; the American Society of Mechanical Engineers)	
..... B36.19-1949	<b>Stainless Steel Pipe</b> .30  <i>Pipe</i> as distinguished from <i>tubing</i> restricts application of this standard to tubular products of dimensions and materials commonly used for pipe lines and connections. ( <i>Sponsors:</i> American Society for Testing Materials; The American Society of Mechanical Engineers)		..... Z32.2.4-1949	<b>Graphical Symbols for Heating, Ventilating, and Air Conditioning...</b> .40  Engineers, contractors, and over 150 companies were consulted in compiling the symbols in this standard. ( <i>Sponsors:</i> American Institute of Electrical Engineers; The American Society of Mechanical Engineers)	
..... C78.413/-	<b>32-Watt T-10 12-Inch Circular Fluorescent Lamp, Dimensional and Electrical Characteristics of, Proposed American Standard</b> .25		..... Z38.7.14-1949	<b>Lantern Slide Projectors, Specifications for</b> .25  This is one of the series of photographic standards. It includes specifications for uniformity of screen illumination; lenses; stray light; slide temperature; and slide carrier. ( <i>Sponsor:</i> Optical Society of America)	
..... C78.414/-	<b>18-Watt T-8 12-Inch Semi-Circular Fluorescent Lamp, Dimensional and Electrical Characteristics of, Proposed American Standard...</b> .25  These Proposed American Standards on dimensional and electrical characteristics of fluorescent lamps are presented for trial and criticism. ( <i>Sponsor:</i> Electrical Standards Committee)		..... Z60.1-1949	<b>Horticultural Standards — Nursery Stock</b> .50  Revision and Expansion of the "Horticultural Standards," recommended for all users of nursery stock. ( <i>Sponsor:</i> American Association of Nurserymen, Inc.)	
..... Z22.34-1949	<b>Cutting and Perforating Dimensions for 35-Millimeter Motion Picture Negative Raw Stock</b> .25  Dimensions given in this standard represent the practice of film manufacturers, in that the dimensions and tolerances are for film immediately after perforation. ( <i>Sponsor:</i> Society of Motion Picture Engineers)				

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